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ABSTRACT

This compilation lists research completed in the areas of health, physical education, recreation, and allied areas during 1976. It is arranged in three parts. (1) Index: In this section, cross references are given for all the listings in parts two and three. References are arranged under the subject headings, which are in alphabetical order. (2) Bibliography: This is a listing of published research, citing articles published in the 169 periodicals reviewed by the Committee for Completed Research. (3) Theses Abstracts: These are master's and doctor's theses from institutions offering graduate programs in health, physical education, recreation, and related areas. (Editors/JD)

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1977-78

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INTRODUCTION

This compilation lists research completed in the areas of health, physical education, recreation, and allied areas during 1976. It is arranged in three parts.

I. **Index.** In this section, cross references are given for all the listing in Parts II and III. References are arranged under the subject headings, which are in alphabetical order. Instructions for using the index are given at the top of page 1.

II. **Bibliography.** This is a listing of published research, citing articles published in the 169 periodicals reviewed by the Committee for *Completed Research*. The periodicals reviewed are listed in pages 337 through 339.

III. **Theses Abstracts.** These are master's and doctor's theses from institutions offering graduate programs in health, physical education, recreation, and allied areas. Institutions reporting are listed on pages 340 through 343. Most references are accompanied by abstracts of the research and all are numbered in alphabetical order according to the institution. Names of institutional representatives sending in these abstracts are indicated in parentheses after the name of the institution, major professors are in parentheses after each reference.

Universities and colleges are encouraged to submit abstracts of theses completed at their institutions in the year 1977 for inclusion in the next issue of *Completed Research*. Material should be sent to Jerry R. Thomas, Chairman for Theses Abstracts.

Jerry R. Thomas
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New York University
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Committee on Completed Research

PART I—INDEX

This index enables the reader to refer to the items of completed research listed in Parts II and III. Research topics are arranged in alphabetical order. The reference numbers following each topic correspond to the listings of completed research dealing with that topic. The capital letter B indicates a reference to be found in the Bibliography (Part II); the capital letter T indicates a reference to be found in the Theses Abstracts (Part III).

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1006. ZERNICKE, Ronald F.; CALDWELL, Gordon; and ROBERTS, Elizabeth M. Fitting biomechanical data with cubic spline functions. Research Quarterly, AAHPER 47:9-19, March 1976.
1007. ZIMMERMAN, Anne. ANA: its record on social issues. American Journal of Nursing 76:588-90, April 1976.
1008. ZUSKIN, E.; VALIE, F.; and BOUHUYS, A. Effect of wool dust on respiratory function. American Review of Respiratory Disease 114:705-10, Oct. 1976.
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PART III/THESES ABSTRACTS

ABBREVIATIONS APPEARING IN THIS PUBLICATION:

AAHPER = American Alliance for Health, Physical Education, and Recreation (abbreviate all familiar organizations, e.g., AAU, NCAA, etc.)
AD = Athletic Director
AE = Absolute Error (CE = Constant Error, VE = Variable Error)
ANCOVA = analysis of covariance
ANOVA = analysis of variance
BP = blood pressure
BTPS = body temp pressure saturated
C = centigrade
CA = chronological age
CO_2 = carbon dioxide
X^2 = chi square
o = degrees
DEPT = department
ELE = elementary
EKG = electrocardiogram
EMG = electromyogram
EMR = educable mentally retarded
exp = experiment or experimental
F = Farenheit
F = *F* ratio
FEV 1.0 or 2.0 = forced expiratory volume
gm = gram
GPA = grade point average
HE = health education, health
ht = height
HR = heart rate
IQ = intelligence quotient
JC = junior college
JHS(S) = junior high school(s)
kg = kilogram
kg/m = kilogram per meter
kpm/min = kilopondmeter per minute
KR = knowledge of results
max = maximum or maximal
measurements, units of*
MS = middle school
mm = millimeter
mph = miles per hour
msec = millisecond(s)
MT = movement time
no. = number (in text, e.g., the total no. of days . . .)

N = number (e.g., of *Ss*) all numbers in arabic form (e.g., 1 = one, 5 = five, 100 = one hundred)
N_2 = nitrogen
O_2 = oxygen
p = probability ($p < .05$ = significance greater than .05 level, $p > .01$ = nonsignificance at the .01 level)
PE = physical education
PR = pulse rate
PWC_{170} = physical work capacity, PWC (level of HR unspecified)
% = percent
psi = pounds per square inch
r = correlation
REC = recreation
RLV = residual lung volume
rpm = revolutions/min
RT = reaction time
SV = stroke volume
SD = standard deviation
SHS = senior high school(s)
STPD = standard temp pressure dry
S(s) = subjects; *S*'s = subject's (possessive; fresh, soph, jr, sr)
t = *t* ratio
tests**
temp = temperature
TRT = total response time (RT + MT)
US = United States
USSR = Union of Soviet Socialist Republics
wt = weight
VO_2 = oxygen uptake
V_E = ventilation equivalent
$\overline{X}$ = mean
V_T = tidal volume
YMCA = Young Men's Christian Association
YMHA = Young Men's Hebrew Association
YWCA = Young Women's Christian Association

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*in. = inch; sec = second; wk = week; hr = hour; min = minute; mo = month; ml = milliliter; oz = ounce; yd = yard, etc.

**Abbreviate all kinds of performance tests if possible (e.g., CPI = California Psychological Inventory; Cattell 16 PF = Cattell 16 Personality Factor Questionnaire; MMPI = Minnesota Multiphasic Personality Inventory).

ABSTRACTS

ARIZONA STATE UNIVERSITY (G. S. Krahenbuhl)
TEMPE, ARIZONA

1. ARCHER, Patricia A. *The relationship of serum testosterone levels to strength, percent body fat, and VO_2 max in females*. M.S. in Physical Education, 1976, 29 p. (G. S. Krahenbuhl)

The relationships between serum testosterone (ST) and static strength, % body fat, VO_2 max before and after a training program were studied in 13 college females. The training program consisted of progressive resistance weight training and jogging for a period of 15 wks, 3 days per wk. The ST levels, measured by radioimmunoassay, ranged from 352 to 1013 pg/mg. The mean ht and wt for the *Ss* was 166.44 ±6.18 cm and 60.92 ±7.58 kg, respectively. The correlations between ST and both strength and $\dot{V}O_2$ max (pre- and post-training) were nonsignificant. The correlation between ST and pre-training % body fat (-.56) was significant. Significant correlations were also found between ST and the % *change* in strength (-.50), and both the absolute (+.73) and % (+.62) change in $\dot{V}O_2$ max ml/kg/min. Therefore, a significant relationship does seem to exist between ST and physical training induced changes in strength, % body fat, and $\dot{V}O_2$ max in females.

2. CROW, Thomas A. *Relationships among academic achievement, strength, motor skills, and self-control*. Ph.D. in Higher Education, 1976, 108 p. (D. E. Richardson)

The relationships among academic achievement, strength, motor skills, and self-control in 2nd grade children were determined. Each of 217 randomly selected *Ss* was administered the Comprehensive Test of Basic Skills (CTBS), Strength Test Battery, Motoric Skills Battery, Walk A Line test, and Draw A Line test. Results indicated a significant relationship ($p < .05$) between mathematics and strength. However, only 3.842% of the variance of the variable mathematics was predictable from the variance of the variable strength. Significant differences were noted between the sexes in reading and total achievement. A highly significant difference was noted in language. There were significant differences among the schools in the variables motor skills and walk a line. Highly significant differences were observed in the variables reading, language, total achievement, strength, and draw a line. The only significant predictor was motor skills for the criterion mathematics. The univariate *F* score was 7.416, which was highly significant, but accounted for only 3.610% of the variance.

3. EKANEM, Okon A. Physical education in Nigerian primary schools and teacher training colleges: An evaluation of attitudes and programs. Ph.D. in Secondary Education, 1976, 211 p. (D. E. Richardson)

PE, as a required subject, has been included in the curriculum of teacher training colleges and primary schools of the South-Eastern State of Nigeria. A standardized attitude inventory and an evaluation instrument (developed for this research) were utilized to test the attitudes of both teacher training college students and primary school teachers toward PE and to evaluate PE in primary schools. The results included the following: students and teachers had positive attitudes toward PE with no significant difference between the groups, but variables such as sex, status, and age interacted, thus the intensity level of expressed attitudes toward PE differed significantly across the various subgroups. For example, female students who were 20 yrs old or less expressed less positive attitudes of intensity toward PE than male students in the same age group. Evaluation disclosed that PE continued to be highly accepted by teachers and school administrators, but that some problems such as limited resource materials, lack of facilities, and shortages of personnel existed in too many primary schools. More research about PE in Nigeria is needed to determine the best solution for these problems of materials, facilities, and personnel.

4. FRIEDLANDER, Stephen S. The job-related physical abilities examination for the entry level police recruit. M.S. in Physical Education, 1976, 88 p. (G. S. Krahenbuhl)

A sample of current Phoenix (AZ) police officers (N=66) was administered an experimental physical abilities test battery consisting of 7 items. Sample members were also rated using a police officer physical ability scale which provided an index of an officer's physical proficiency in pursuit, apprehension, retention, self defense, and aid to others in emergencies. The final test battery was to be used in the screening process of Phoenix police recruits. A discriminant function analysis was run on the data and determined 3 items for use; namely, the 5 ft ditch jump, the 106 yd run, and the 30 yd rough terrain run.

5. GAINTNER, Gerald L. Athletes' and coaches' expectations of coaches. Ed.D. in Physical Education, 1976, 92 p. (W. J. Stone)

6. LEUCK, Michael R. Aggressive behavior of spectators while viewing an athletic contest. M.S. in Physical Education, 1976, 30 p. (J. E. Odenkirk)

7. PETTIT, Lynn L. *Relationship of estrogen levels to strength, percent body fat, and VO_2 max in college females*. M.S. in Physical Education, 1976, 27 p. (G. S. Krahenbuhl)

Serum estrogen (estradiol) level and its relationship to strength, $\dot{V}O_2$ max, and % body fat, were studied in 13 college age women before and after a 15 wk conditioning program. The 15 wk conditioning program brought about significant changes in strength and $\dot{V}O_2$ max. Although % body fat did decrease, this change was not significant. Estradiol levels, taken on the 8th day following the onset of menstruation, were measured by radioimmunoassay. These measures were correlated with pre and posttest scores, and absolute and relative improvement on the 3 physical capacities. Estradiol levels were significantly and negatively related to pre (-.69) and post-training (-.70) strength scores. The fact that estradiol was not significantly related to absolute and % improvement in strength suggests that all *Ss* benefited strength gains despite individual estrogen levels. No significant correlations were found between $\dot{V}O_2$ max and estrogen, except when expressed as L/min on the posttest. In this case, estradiol and $\dot{V}O_2$ max had a significant, negative correlation (-.61). Until the effects of estrogen on skeletal muscle and the respiratory and vascular systems are known, explanation of these results remains speculative.

8. PIPHER, Debra J. *The relationship of selected leg power tests, height, and weight to the grab and traditional starts*. M.S. in Physical Education, 1976, 37 p. (G. S. Krahenbuhl)

The relationships between the grab start (GS) and the traditional swimming start (TS) to selected leg power tests (standing long jump and vertical jump) were studied in 12 female competitive swimmers from Arizona State University. A two-way ANOVA revealed the $\bar{X}$ performance time of the GS was faster than the TS for all *Ss* tested ($p < .0005$). The start was defined as an 8 ft distance from the starting block. A significant $+r$ was found between body ht and the GS. Body wt was found not to be significantly related to either start. Although no significant *r* was found between the standing long jump or vertical jump to either start, the results suggest that leg power may be a prerequisite for successful starts using the grab technique; however, it appears not to be a factor in the TS.

9. SCHACHT, Charles A. *Effect of exercise upon speed of movement on a simple response task*. M.S. in Physical Education, 1976, 32 p. (G. S. Krahenbuhl)

AUBURN UNIVERSITY (G. Dennis Wilson)
AUBURN, ALABAMA

10. ANDREWS, Michele A. Comparison of maximum oxygen consumption of active college women during a treadmill test and a tethered swim test. M.S. in Health, Physical Education, and Recreation, 1976, 43 p. (G. Dennis Wilson)
One's ability to extract O_2 from the air and provide it to the working muscles is an important consideration in determining the physical working capacity. Many investigators have recognized this and developed techniques to measure $\dot{V}O_2$. The laboratory treadmill test is an accpeted method of $\dot{V}O_2$ testing, and the tethered swim test has also been used in recent yrs to measure this parameter. Women's physical working capacity has not been evaluated to a great extent, especially with a swimming ergometer. The physiological data on 11 untrained women Ss resulting from tests with the treadmill and tethered swim were compared. Testing was done in the laboratory and university pool in randomized order. Expired air was collected in 1 min samples in meterological balloons and analyzed for $\dot{O}_2$ content using a Beckman Fieldlab O_2 analyzer. HR, VE, and $\dot{V}O_2$ were recorded for each test. The data were treated statistically using a t test for related measures and all data were found to be significantly different for the treadmill and swim tests. It was concluded that a tethered swim test could be used for max VO_2 screening in certain situations if a correction factor of 1.2 was applied to the swimming data.

11. CARROLL, Shirley A. Effect of warm-up on the 440 yd run. M.S. in Education, 1975, 33 p. (M. J. Morgan)
The effect of warm-up on performance of the 440 yd run was determined. Ss were 8 male and 16 female undergraduates chosen from Foundations of PE classes at Auburn University. Ss were divided into warm-up and no warm-up groups with each S participating in each group and acting as his own control. While the no warm-up group sat on the side of the track, the warm-up group jogged 5 min around the outdoor track, stopped and took HR for 15 sec. If HR was 106-118 bpm for males or 138-150 bpm for females, Ss rested 5 min and then ran 440 yd in groups of 6. While the warm-up group rested, the no warm-up group ran 440 yd in groups of 6. Testing was conducted over a period of 6 days with each condition being met 3 times. A paired sample t test was used to determine if a significant difference existed between the 2 test conditions. Results showed: no difference between times of warm-up and no warm-up conditions for combined groups, no difference in times for warm-up and no warm-up conditions for females, and a significant difference between warm-up and no warm-up conditions for males.

12. PYLE, Janice S. Inadequate prenatal care: A profile of selected recipients in Lee County, Alabama and the obstacles to care. M.S., 1975, 62 p. (Richard K. Means)
A profile of women in Lee County, AL, who received inadequate prenatal care during pregnancies which terminated between Dec. 31, 1974 and Apr. 30, 1975, was developed, in addition to identifying the obstacles to receiving this care. Prenatal care was determined to be inadequate when a woman was admitted for delivery on an emergency basis without an attending physician. The study group was composed of 11 women who were interviewed within 48 hr after delivery. A questionnaire was used to give consistency to the data collection process. The responses were classified and analyzed to determine frequency and/or percentage. The findings of the study indicated that those who omitted prenatal care were young, unemployed, black, multigravidae, who lacked a high school education, and, if married were supported by husbands engaged in unskilled labor. The principal obstacles identified, in descending frequency, were lack of finances, lack of proper motivation, logistical problems, and lack of awareness of the pregnancy.

BRIGHAM YOUNG UNIVERSITY (Donald D. Shaw)
PROVO, UTAH

13. ADAMS, Larry [illegible]. A cinematographic analysis of the triple jump. Ed.D. in Physical Education, 1975, 276 p. (C. B. Call)
A movie film of the triple jump was projected, and body parts were plotted by dots. The distances from the dots to a baseline were measured, and the distances were displayed graphically. Conclusions were: the last step was both lengthened and shortened. The take-off foot landed heel first. The 3rd take-off angle was greatest; the 2nd was smallest, except for 1 S. The lead extremities were elevated most in the 3rd take-off, and least in the 2nd take-off. Forward lean changed constantly and increased more in successive flights. Parallel coordination of the arms and the lead leg was recommended. Transfer of momentum from the lead extremities was enhanced by a high posterior starting position, and a high anterior elevation that was terminated at the end of the take-off. Newton's 3rd law of motion was used twice to place the legs in landing position in the 3rd flight.

14. ALAROTU, Aaro J. A comparison of selected Nautilus system and freebar exercises on strength. M.S. in Physical Education, 1976, 61 p. (L. Johnson)
48 male Ss were assigned randomly into 2 treatment groups. Group A used 5 upper body Nautilus machines performing 1 set with 10-12 repetitions at each machine. Group B trained with 3

freebar upper body exercises consisting of 4 sets of 4-6 repetitions on the bench press, 3 sets of 4-6 repetitions with the military press and 3 sets of 4-6 repetitions with dips. The no. of repetitions were equal in both treatment programs. Based on the ANOVA tests, the following conclusions were made: both Nautilus and freebar strength training programs were effective in causing strength gain; the Nautilus and freebar strength training programs as utilized and evaluated in this study did not yield significantly different strength gains, and the training modality used to increase strength is not of critical importance. The crucial factor is the amount of resistance present in the training program.

15. ANDERSON, Cristina T. Sports clubs in Brazil. M.A. in Physical Education, 1975, 108 p. (L. Holbrook)

The history and socio-cultural aspect of sports activities and clubs in Brazil was studied, including their interests and influence on PE, sports and clubs. The city of Porto Alegre, with its two main professional clubs, and SOGIPA and Uniao, amateur clubs, was the focus of this study. Normative survey and historical design were the methods used. The no. of sports clubs has grown from 80 in 1900 to 8,310 in 1969, but, in spite of the continuous growth of the sports clubs, membership is still a privilege of the middle and upper classes. It is concluded that in spite of the government's collaboration in the development of sports in Brazil through the Sport Enlightenment Program, the private sports clubs are still the foundation of PE and sports. As a result of the findings, a no. of recommendations were made for future research and club activity.

16. BAWDEN, Michael W. Participant recommendations for an ideal recreational vehicle park. M.A. in Recreation Education, 1976, 100 p. (C. T. Thorstenson)

A determination was made of what services and facilities campground users considered necessary and desirable, and whether there was any difference between age group preferences and their willingness to pay extra for the services and facilities they preferred. A checklist questionnaire was administered during the summer and fall of 1973 at 2 recreational vehicle parks in Salt Lake City, UT. Most participants were adults from the Western states traveling in groups of 2-4 people. Most professional people traveling in recreational vehicles desired most of the services and facilities listed on the questionnaire. The data indicated no significant difference between age groups and their preferences, but there was a significant difference in their willingness to pay for the desired services and facilities.

17. BEECHER, Robert C. Music as a positive reinforcement for increasing head control in stationary balance for neurologically impaired and mentally retarded persons. M.S. in Physical Education, 1976, 89 p. (C. B. Call)

Ss included 14 male and female residents at the Utah State Training School. 8 Ss were in the experimental group and 6 Ss were in the control group. Both groups participated in 24 sessions: 6 baseline, 12 treatment, and 6 extinction during the Spring of 1976. Neither the null nor the alternative hypotheses could be accepted because of the great inter-subject and intra-subject variance. 4 of the 8 Ss receiving the reinforcement increased their amount of head control because of music. 2 of these were significantly higher statistically. A significant correlation was shown between time and frequency of heads held erect for all study participants.

18. BLANCHARD, John C. The relationship between Big Brother programs involvement and the self-concept level of selected fatherless boys. M.A. in Recreation Education, 1976, 85 p. (B. K. Olsen)

A measurement was made of the self-concept levels of youth participants before and after a 1 yr participation in the Big Brothers Program of UT, using both experimental and control groups. The null hypothesis was that upon termination of the 1 yr testing period, there would be no significant differences revealed in self-concept level when comparing the fatherless experimental group with the fatherless control group (N=20 each group) with the only difference being the control group's lack of program participation during the testing yr. The Tennessee Self Concept Scale (TSCS) was selected and administered to all participants on a pre and posttest basis. Results indicated that the program did produce significant changes in self-concept levels as measured by the 14 scales of the TSCS, Counseling Form; therefore, the null hypothesis was rejected.

19. BROWN, H. L. Breath control, breathholding, and underwater effectiveness: A comparison of several techniques of training. M.S. in Physical Education, 1976, 80 p. (B. L. Bangerter)

61 Ss, 37 males and 24 females, participated in a study comparing 6 treatments of training (control, interval underwater swimming, interval breathholding, circuit training, cycle breathing, and drownproofing) upon breath control, breathholding, and underwater effectiveness. Ss were assigned to groups by the time of day they could participate in the study. The groups were randomly assigned to treatments. All Ss were pretested, trained for 5 wks, and posttested. It was found that the 5 groups of experimental Ss (interval underwater swimming, interval breathholding, circuit training, cycle breathing, and

drownproofing) were significantly better in improving breath control, breathholding, and underwater effectiveness than the control, where $p < .05$. Of the 5 exp. treatments, interval breathholding was the least effective in improving breath control and underwater effectiveness. The females had greater gains in underwater effectiveness than the males.

20. BULBULIAN, Ronald. The effects of jogging and walking on the cold pressor response. M.S. in Physical Education, 1976, 44 p. (A. G. Fisher)

Testing was done to see if exaggerated responses to the cold pressor test could be altered through a carefully administered jogging or walking program. 40 male Ss between 40 and 60 yr were randomly divided into 3 treatment groups. Group 1 trained by jogging 5 days/wk. Group 2 trained by walking 5 days/wk. Both exp. groups trained at the 30 point level/wk on the Cooper Aerobics Charts. Group 3 was the control. After the treatment period, no significant difference in cold pressor response was found between the groups. There was no relationship between % body fat and the cold pressor response.

21. COPELAND, Kenneth W. A fault tree analysis of the graduate division of the Department of Physical Education, College of Physical Education at Brigham Young University. Ed.D. in Physical Education, 1976, 130 p. (J. R. Jones)

Semi-structured interviews were completed with members of the graduate faculty and graduate Ss in the DEPT. 133 possible failure causing events were identified, a Fault Tree was constructed, the quantification of the Fault Tree was completed and strategic pathways to failure were identified. Conclusions were drawn on the findings in the study and recommendations for the elimination of the strategic pathways to failure were made as were recommendations for further study in this area.

22. FELLINGHAM, Gilbert W. Caloric cost of walking and running. M.S. in Physical Education, 1976, 71 p. (E. Roundy)

24 young adult male Ss were studied to determine the relationship between caloric costs of walking or running a mile and the speed of movement, and between those costs and the fitness level of the individual. Development of regression equations to predict caloric costs based on body wt, speed of movement, and VO_2 max was also considered. It was found that running is more costly than walking, the cost of walking or running a mile increases with speed of movement, and caloric cost and VO_2 max are inversely related at a given running speed. Equations were generated to predict the caloric cost of walking or running a mile. The independent variables for the walking equation included body wt and speed squared x body wt ($R^2 = .86$). The

independent variables for the running equation were identical to the ones used in the walking equation with the addition of speed x $\dot{V}O_2$ max (R^2=.62).

23. GARBETT, Michael J. *The effect of the community school concept upon planning and utilization of indoor physical education facilities in the United States since 1970*. Ed. D. in Physical Education, 1976, 190 p. (B. O. Jarman)

The effect of the community school concept upon trends in planning and utilizing indoor PE facilities in the US which have been completed since Jan. 1, 1970, was evaluated. A questionnaire survey was prepared and mailed to selected traditional and community schools throughout the US. The findings provided information pertaining to the following: the planning base for the school facility, the human involvement in the planning process, the design characteristics, the utilization of the indoor PE facilities, and the data for developing guidelines for planning indoor PE facilities to provide max utilization. From the findings, certain conclusions were drawn in the above areas of concern, and recommendations were suggested.

24. IVERSEN, Sheila R. *The impact of social changes from 1965-1975 upon girls' secondary education programs in Utah*. M.S. in Physical Education, 1976, 78 p. (C. J. Rasmus)

Women PE instructors (*N*=60) were surveyed by questionnaire as to what social changes they judged most influential in UT SHS and how these changes have affected their girls' PE programs. 71% returned questionnaires. Results showed that equal rights (93%), needs and interests of students (90%), social values (88%), and mass communication (81%) were significant to changes within the girls' PE programs. 80% of the *Ss* reported significant increases in interscholastic girls' athletics, and 85% felt the social stigma associated with girls' athletics was lessening. 90% of the *Ss* reported carrying heavy coaching loads.

25. JETTE, Nadine. *The effect of modern dance and music on body image and self-concept in college women*. Ed.D. in Physical Education, 1975, 113 p. (P. Jacobson)

108 female volunteers from the University of Minn. were randomly divided into classes in 1 of the 6 treatment groups. Groups 1 and 4 participated in the modern dance with muscial accompaniment. Groups 2 and 5 participated in the music with rhythmical activities. The 4 exp groups met 1 hr/day, 3 days/wk, for 7 wks. Groups 3 and 6 were the control. After the treatment period, no significant difference in body image or self-concept was found between classes or groups.

26. KALUHIOKALANI, Norman A. The cardiovascular fitness of selected civil servants in the state of Hawaii. Ed.D. in Physical Education, 1976, 122 p. (B. O. Jarman)

Male Ss (N=123) from 6 occupations, fire fighters, police officers, clerks, accountants, engineers and supervisors, from the 4 city and co. governments (Kauai, Maui, Hawaii, Honolulu) were tested by Coopers 12 min walk/run. The differences in cardiovascular fitness in 8 areas were considered: between sedentary and active occupations, between employees of similar occupation on a co. to co. basis, among counties, among occupations, due to age, due to marital status, due to education, and due to ethnic background. The findings indicated that fire fighters and the Polynesian-European ethnic Ss had the highest level of cardiovascular fitness; accountants and the Polynesian ethnic Ss had the lowest level of cardiovascular fitness, and age, occupations, and ethnic background all showed a significant effect on the cardiovascular fitness of the Ss.

27. KING, Steven M. Desirability of selected design elements for artifical climbing walls. M.A. in Recreation Education, 1976, 110 p. (B. F. deHoyos)

A determination was made from the opinions of experienced climbers of dimensions, surface features, spatial arrangement of features, and materials which should be present in artificial climbing walls. It was assumed that these walls would provide appropriate challenges for beginning, intermediate, and advanced climbers engaged in instruction or practice. Skilled climbers (N=37) from the Central UT area, of which 28 had had formal teaching experience, were sampled. The desired size of cling, counterpressure and friction holds, types of jam holds desired, the desired ht and width of routes, the most desirable building material, the desirability of laybacks, overhangs, and other related features, and the positive and negative aspects of artificial climbing walls were determined.

28. LAMPH, James A. The effect of two different basket heights on rebound area. Ed.D. in Physical Education, 1976, 75 p. (P. E. Allsen)

The effect of the 10 and 11 ft basket hts upon rebound area was studied. 36 Ss were selected according to body ht, player position and skill level. A total of 14,100 rebounds were collected at each of the 2 basket hts. Data were collected and subjected to either X^2 analysis or Hypotheses Tests for proportions to determine significant differences between basket ht and its effect upon rebound area. Results showed that when all of the rebound arcs are combined, there is a difference between the effect of the 10 and 11 ft basket on rebound area. Shooting location and player position also have some effect upon rebound areas when shooting at the 10 and 11 ft baskets; however, from a practical statistical viewpoint, elevating the basket to 11 ft would have little effect upon rebound area in game situations.

29. LANFORD, E. E., Jr. The effect of strength training on distance and accuracy in golf. Ed.D. in Physical Education, 1976. (L. Johnson)

Male Ss (N=32) were randomly assigned to a control group and to an exp group. The exp group participated in a strength program and a schedule of practice and play for 10 wks. The control group engaged in a program of practice and play for 10 wks. All Ss were given pre and posttests as follows: 1 repetition max of the bench press, grip test for right and left hand grip strength, drive test for distance and accuracy, and an approach test for accuracy. An ANOVA, t tests and a correlation coefficient analysis were used to test for significant results. The following conclusions were drawn: strength training increases the distance of the golf drive, there is no evidence that strength training has a harmful effect on the accuracy of the golf shot, and golfers who lack sufficient distance with their drive should engage in strength training.

30. LEISHMAN, Courtney M. Stanley Howard Watts—man of excellence. Ed.D. in Physical Education, 1976, 175 p. (D. D. Shaw)

The purpose of this historical survey was to write a biography of Stanley Howard Watts with emphasis upon his basketball coaching career at Brigham Young University from 1947-1976.

31. LI, Roland K. The status of recreation services for the handicapped in Provo, UT. M.A. in Recreation Education, 1975, 60 p. (B. F. deHoyos)

A sample (N=18) of REC agencies and institutions in Provo, UT, were surveyed. 17 of the 18 surveyed provided facilities, money, or some sort of REC services for the handicapped. Senior citizens were receiving service from most of the agencies. A few of the agencies also provided REC services for individuals with psychiatric problems and the mentally retarded. The main objective for providing these services was to boost the patients' morale and to expand their REC interests and skills. Part-time volunteer workers, mainly students from BYU, are the primary source of leadership for these services. However, the agencies feel that their REC services are adequate.

32. MULLEN, Mary Jo. An electromyographic study of selected upper extremity muscles, utilizing electrogoniometry, during the performance of selected movements occurring in the shoulder and elbow articulations. Ed.D. in Physical Education, 1976, 128 p. (B. C. Call)

By means of electromyography, this study investigated the action potentials of the biceps brachii, latissimus dorsi, anterior and posterior portions of the deltoid, sternal portion of the pectoralis major, and the long head of the triceps brachii during the pull-up with both supinated and pronated grips, push-up, parallel dip, combined shoulder flexion with elbow extension, and the bench press. With the aid of electrogoniometry, the action potentials were related to joint changes in the shoulder and elbow joints. _Ss_ included 6 university male students who were skilled in the techniques of wt training exercises. It was found that action potential recordings of the active muscles were higher during the antigravity phase than the gravity phase; less energy was required from a muscle to maintain a static position than to produce or control movement, and the strength of the contraction was dependent on the amount of resistance to overcome.

33. NOBLE, David L. _A river runner's guide of the Middlefork and Main Salmon Rivers_. M.A. in Recreation Education, 1976, 113 p. (B. F. deHoyos)

An investigation was made concerning the history and folklore of the land along the Middlefork and Main Salmon Rivers, from the coming of the white man to the present day. Current rapid and campground information was included in a mile by mile description of the river. With the increasing no. of participants, more rapid and campground information is needed. The Forest Service should be cooperated with fully to make the experience safer and more enjoyable.

34. NYQUIST, Deborah A. _A determination of the relationship between the Sharkey step test and the Cooper 1.5 mile run_. M.S. in Physical Education, 1976, 66 p. (J. M. Harrison)

Three subproblems were examined: if any difference in the selected tests were affected by sex, the effect of the wt control program on cardiovascular endurance, and the effect of the endurance program on cardiovascular endurance. Findings were based on test scores achieved by students in the 15 sections of Fitness for Life classes at BYU, Fall semester, 1974. Only students completing both pre and posttests were included. A low positive correlation of .2895 on the pretests and .3405 on the posttests was obtained. Correlations for men of .5660 on the pretest and .6399 on the posttest were higher than the correlations for women of .3419 and .3751 respectively. There was no significant difference in performance on the tests by students in the endurance and wt control programs. Students in both programs showed significant increases in cardiovascular endurance.

35. PARKER, Giles E. A history of the Rocky Mountain, Skyline, and Western Athletic Conferences: 1909-1976. Ed.D. in Physical Education, 1976. (M. F. Hartvigsen)

The history of the Rocky Mountain Faculty Athletic Conference, the Mountain Intercollegiate Athletic Conference, and the Western Athletic Conference was investigated. Consideration was given to: reasons for the organization and the demise of each conference, sports programs sponsored by each conference and the competitive results of these programs, policies, rules and regulations of each conference, major problems encountered in the administration of each conference, highlights and interesting anecdotes from the history of each conference, and the future of the WAC. Standings for each conference sport, conference records, and All-Conference selections and champions from the Winter of 1909 through the Spring of 1976 are included.

36. POTTER, Glenn R. An analysis of selected variables in NCAA Division I basketball during the last three minutes of play with implications for a 30 second time limit on team possession. Ed.D. in Physical Education, 1976, 115 p. (E. Roundy)

Teams were divided into 5 geographic districts. Data were collected from a total of 259 games resulting in a total of 3,655 possessions. The dependent variables were the $\bar{X}$ time of possession and the no. of possessions exceeding 30 sec. The independent variables were: districts, teams, games, home vs visiting teams, differences in score and reasons for loss or possession. The following conclusions were made: the closer the score, the longer the teams tend to maintain possession of the ball in the last 3 min of play; the home team tends to control the ball longer than the visiting team in the last 3 min of play; and there is little need for a 30 sec time limit in the last 3 min of play in NCAA Div I basketball.

37. ROMINE, Jonathan S. A critical evaluation of the springboard diving rules contained in the Official NCAA Swimming Guide. M.S. in Physical Education, 1976, 134 p. (E. Roundy)

This study investigated the consistency with which the rules governing springboard diving, as set forth in the Official NCAA Swimming Guide, are interpreted, and surveyed considered judgments of experts on the judging of diving. A questionnaire was developed and sent to 28 selected authorities, of whom 16 responded. The data were analyzed by X^2 and usage of percentage. Findings were: there is a difference in the interpretations of the rules that establish the criteria for the judging of springboard diving, and better definitions and explanations are needed in the rules which govern springboard diving.

38. SMITH, Edward D. The effectiveness of the school-community council. M.A. in Recreation Education, 1976, 103 p. (B. K. Olsen)

17 council functions were identified from the existing literature and proposed to selected regional and cooperating center directors across the country, selected district coordinators, community school directors, community school principals, and council members in UT. Groups were asked to rate the functions selected as to importance of the function, how effectively it was carried out by councils, whether or not the function was viewed as a function, and if the function was necessary for council effectiveness. The ratings produced $p < .05$ on all but one of the 68 items, and the null hypothesis was rejected at the .05 level. Based on these data, school-community councils in UT were found to be ineffective.

39. SMITH, Margie D. The effects of an instructional ball handling skills program on self concept, peer approval, and skill level of fifth grade students. M.S. in Physical Education, 1976, 75 p. (B. Jarman)

44 5th grade students from Rock Canyon ELE school participated in the study. They were randomly assigned to either the ball handling group (N=24) or to the control group (N=20). Ss participated in the ball handling skills found in softball, basketball and hockey for 6 wks. ANOVA for the difference between pre and posttest $\bar{X}$ scores for each of the 13 dependent variables was computed. The null hypothesis was not rejected with reference to the influence a ball handling skills program can have on self concept and peer approval. With regard to skill ability, the null hypothesis was rejected, and the alternative hypothesis accepted. Insufficient amount of time was thought to be a limiting factor in this study.

40. SOPER, Edward L. Socioeconomic and medicare status differences between elderly Church Service and LDS private pay hospital patients. M.S. in Health Science, 1976, 127 p. (D. D. Shaw)

The kind and degree of differences that exist in the socioeconomic status and access to financial resources of elderly members of the Church of Jesus Christ of Latter-Day Saints, and the differences existing between Church Service and private pay elderly hospital patients were examined. Economic status, type of housing, housing costs, marital status, sex, no. and degree of access to children, savings and other assets were considered. Certain elderly members of the LDS Church were found to be significantly economically deficient because of inadequate income, low lifetime earnings, and high medical expenses. Findings suggest the present system of medical welfare is somewhat inadequate, especially where hospitals provide direct service.

Church Service individuals should be helped to more adequately plan their retirement finances.

41. STINE, Steven W. The relationship of strength, power, and cardiovascular endurance to selected variables relating to success in learning tennis. M.S. in Physical Education, 1976. 60 p. (L. C. Johnson)

65 male Ss were tested the 1st wk of the term on the independent variables of strength, power and cardiovascular endurance and ranked high, medium, or low. Tests on dependent variables were given the last 2 wks. These test results determined the dependent variable's relationship to independent variables by use of statistical procedures. The findings indicated: strength and cardiovascular endurance had no significant relationship to the 6 dependent variables; power had a significant relationship to the following dependent variables: speed of serve, combination of service placement and speed of serve, and a combination of placement, speed, and Hewitt's backboard test. Correlation coefficient tests showed significant predictability of strength and power to Hewitt's backboard test and strength alone to % of wins. Instructors should develop power in beginning tennis players.

42. VICKERS, Betty J. A comparative analysis of motor skill performances with academic achievement scores of fourth grade students. Ed.D. in Physical Education, 1976, 85 p. (L. Johnson)

197 students were randomly selected from 33 ELE schools in UT co. Each student was tested in broad jumping, performing a cartwheel, catching, punting, running, striking and throwing, and Section I and II of the PIAT. Pearson correlation coefficients were then drawn. Although numerous statistically significant relationships were found, the r^2 correlation coefficients were generally low. Findings indicated a positive relationship between the position of the child in the family and level of achievement. The influence of ht and socio-economic factors on achievement was too low to be of practical value.

43. WEATHERS, Robert D. Assessment of skin diving fitness. Ed.D. in Physical Education, 1976, 70 p. (A. G. Fisher)

28 certified male divers between the ages of 18 and 31 yrs served as Ss in a study comparing max $\dot{V}O_2$ during water treading with fins and treadmill running, and the predictability of max $\dot{V}O_2$ by performance on selected field tests. It was found that there was an 18.5% reduction in max $\dot{V}O_2$ during water treading as compared to running. This decrement was found to exceed the .0005 level of significance. Multiple regression of performances on 7 field tests revealed 1.5 mi run time to be the best contributor to prediction of max VO_2 during running. It also

was the most significant predictor of max $\dot{V}O_2$ during water treading when the latter value was expressed in ml/kg/min. Water treading max $\dot{V}O_2$ in l/min was best predicted by time for a 700 yd swim with mask, fins, and snorkel. All prediction equations were significant at the .0005 level.

44. WILSON, Julie. An investigation of reasons why Brigham Young University students enroll in social dance and bowling. M.A. in Recreation Education, 1976, 71 p. (B. F. deHoyos)
Sex, age, class status, marital status, and previous dance or bowling experience were used to determine the relationship of these characteristics of the 200 Ss to their enrollment in either social dance or bowling. Bowling classes were used as a comparison group because of similar characteristics of each class. Data indicated that Ss enrolled in social dance for the following priorities: self-improvement, social factors, and convenience factors. 100% of the sample enrolled to learn how to dance. Of the sample enrolled in bowling, the following priorities were given: convenience, self-improvement, and social factors. 90% of the bowling sample enrolled to learn how to bowl.

CALIFORNIA STATE UNIVERSITY LONG BEACH, CALIFORNIA (W. J. Boring)

45. BARNETT, James P. A survey of high school boys' attitudes toward "elective pass-fail" physical education. M.A. in Physical Education, 1976, 64 p. (T. Morgan)
This study recorded the attitude change of HS age boys in transition from "traditional" to "elective pass-fail" PE programs. To determine the degree of attitude change, 4 questionnaires were constructed and distributed between 1971 and 1974. Data obtained reflected students' attitudes toward the specific PE areas of attendance, suiting, effort, skill, tardiness, sportsmanship, future use, and physical fitness. Evaluation of 1803 respondents to the 4 questionnaires pointed to a very decidedly more positive general attitude toward an "elective pass-fail" type PE program. The findings were presented to appropriate HS administrators enabling them to better determine whether the new elective pass-fail program should become permanent in the district curriculum.

46. BRUGGEMAN, Mary A. Relationship between self-concept and the ability to learn a novel motor skill. M.A. in Physical Education, 1977, 93 p. (J. Rose)
The relationship between self-concept and the ability to learn a novel motor skill was examined. 301 8th grade female PE students were given a self-concept test. From these scores, 1

group was labeled high and 1 group was labeled low self-concept. Both groups were given an adapted Dyer backboard tennis test as a measure of their ability to learn a novel motor skill. The initial and final novel motor skills test of 6 trials were compared . Using the .01 level of confidence, it was found that both groups improved significantly between their initial and final novel motor skills test. However, there was no significant difference between the 2 groups on the initial novel motor skills test, but the greater gain was within the high self-concept group.

47. DIDINGER, Charles T. Pulley-weight training and surfboard paddling: Is there a positive correlation? M.A. in Physical Education, 1977, 40 p. (W. Boring)
The effects of a 7 wk program of pulley-wt training which exactly duplicated surfboard paddling on increasing surfboard paddling speed over a distance of 100 yds were examined. 41 Ss were tested at King Harbor Marina, Redondo Beach, CA, an area sheltered from the wind, on April 3, 1976. Ss were then divided into an exp and a control group. During the course of the study, 4 Ss from the exp group dropped out of the study for personal reasons. The exp group trained on the pulley-wts 3 days/wk for 7 wks. Missed training sessions were made up on the Sat. or Sun. following the missed session. The control group surfed during this period, as did the exp group, but did no wt training of any kind. After the 7 wk training program, the exp group showed significant gains in surfboard paddling speed.

48. FIGUEIREDO, Paulo C. The role of sports in Brazil. M.A. in Physical Education, 1976, 99 p. (D. Toohey)
The history and growth of sports in Brazil were examined. A brief history of Brazil and its development as a nation in a changing world is presented. The main points discussed are those concerned with governmental influence in the growth and development of sports. Included in this process is the role of sports in Brazilian culture. This research examines the importance of sports in Brazil's quest for international recognition. The philosophical concepts that have evolved are examined.

49. LEVIN, Cathryn L. Nationalism in sport. M.A. in Physical Education, 1975, 133 p. (D. Toohey)
The nature of nationalism and evidence of nationalism in international sport were examined. An investigation was conducted to develop a theory of nationalism which established the following components of nationalism: fatherland, national identification, national unity, national prestige, national mission, national security, economics, communication, politics, and international relations. Upon this theoretical base, evidence of

nationalism in sport was examined in 20th century international sport. An analysis of this evidence revealed the following conclusions: international sport priorities are reflected in national economics; international sport has been infiltrated by politics making it national policy; political leaders have discovered personal benefits from sport affiliations; Olympicism has illuminated the conflict between nationalism and internationalism; communication is vital to nationalism in sport; and international sport is a symbol used to propagate nationalism and system priority.

50. LUPCHO, Paula R. *Culture and sport*. M.A. in Physical Education, 1977, 156 p. (D. Toohey)

This thesis examined the concept of culture and developed a synthesis of essential components categorized as the: nature, universals, processes, and dynamics of culture. The 1st category reveals the paradoxical essence of culture; the 2nd encompasses elements common to each diverse culture; the 3rd includes those elements related specifically to development of the individual within a culture; and the last presents the processes by which cultures change. Thus, a theoretical base was established through which sport as a function of culture was examined. Evidence of sport from a cultural perspective revealed the normative and structural relationship distilled from the ongoing cultural processes resulting in that human behavior identified as sport. This evidence demonstrated the inextricability of sport and culture as an abstraction and as operant social behavior, and further revealed that sport exists only when the normative base of culture incorporates value orientations inherent in sport.

CALIFORNIA STATE UNIVERSITY (R. J. Gannell)
LOS ANGELES, CALIFORNIA

51. BLACKSTONE, Martin. L. *A handbook for junior college football coaches on line play in the 5-2 defense*. 1969

52. CONNELLY, Daniel E., Jr. *Comparative cinematographical analysis of back over bar somersault*. 1974

53. COOPER, Edward R. *The design and construction of a body densitometer and swim ergometer for the human performance laboratory*. 1974.

54. DOHLING, Gerald R. *A comparison of the backboard and rim as focal points of aim for shooting the basketball jump shot*. 1975

55. FREEDMAN, Morris. *The physical condition status of high school football players during a playing season*. 1974

56. HARANG, Jeffrey L. The design, development and operation of a concentric, eccentric and isometric strength measurement device for the biceps muscle. 1975.

57. HOLMES, John A. A comparison of attitudes of high school students toward traditional and modified scheduling of physical education classes. 1976

58. KUBISHTA, Barry N. A study of wood vs. aluminum baseball bats for hitting distance. 1975

59. LOCKWOOD, Bonita L. Relationship of body image to balance, vision, and reading among high school girls. 1974

60. LOSS, Thomas A. Criteria for the evaluation of physiological studies in transcendental meditation. 1976

61. MOODE, Michael F. A resource manual of kinesiology laboratory experiences. 1975

62. MORGAN, Carol J. A standardized test for the scoop in hockey. 1974

63. MOXLEY, Jay I. A study of the attitudes of students, parents and physical education teachers toward purposes in physical education.

64. NETHERLAND, Sylvia J. A curriculum guide for elementary special education teachers. 1976

65. NISHIOKA, Hayward. A study to determine methods of including judo in the high schools of the state of California. 1975

66. PACK, Irma J. Effects of a relaxation program upon behavior patterns of special education students with hyperactive behavior. 1976

67. PASSNO, Paul A. A defensive playbook for a junior college football program. 1976

68. PINDROH, Robert A. A guide to the use of weights in conditioning baseball pitchers. 1975

69. PIWNICA, Pamela F. The relative contributions of isokinetic and isotonic exercise on the reduction of coronary disease risk factors and body weight. 1974

70. SMITH, Richard. The effectiveness of football scouting procedures in developing a defensive game plan at Lynwood High School during the fall, 1975 season. 1976

71. SMITH, Wayne R. The effect of the duration of related aerobic warmups on anaerobic performance of conditioned collegiate cross country runners. 1975

72. STEVENS, George R. A comparison of the results of physical fitness programs conducted by the Los Angeles Police Department and the Los Angeles County Sheriff's Department as measured by a selected physical fitness test.

73. STRAMETZ, Donald G. Analysis of golf swing teaching methods. 1976

74. TAMBARA, Barry. The organization and administration of the cross country program at Bassett High School. 1976

75. VALENTINO, James M. A handbook for the development of high school pitchers. 1975

76. WAMBOLDT, Constance. Comparison of characteristics of males and females in the selection of coaches for high school girls athletic teams. 1975

CALIFORNIA STATE UNIVERSITY (B. Bartee)
SACRAMENTO, CALIFORNIA

77. BEE, Janet. Classroom "mini units" for physical education. M.A. in Physical Education, 1976, 220 p. (F. Furukawa)

78. BERRYESSA, Jeffrey A. A comparison of qualities of the "ideal" cross-country coach as rated by cross-country coaches and cross-country runners. M.A. in Physical Education, 1975, 119 p. (F. B. Jones)

79. BLECHA, Frances A. The origin and development of the citizens savings athletic foundation in Los Angeles, California from 1936 through 1973. M.A. in Physical Education, 1976, 267 p. (H. H. Wolf)

80. BOX, Jacalyn G. A study of the consistency of twenty-five national rated volleyball officials in California during the 1974-75 women's intercollegiate season. M.A. in Physical Education, 1975, 98 p. (B. A. Bartee)

81. CLEMONS, Patrick M. Sculpture: The thrower. M. A. in Physical Education, 1976, 15 p. (F. B. Lewis)

82. DILLON, Kathryn T. The historical development of the South Pacific games. M.A. in Physical Education, 1975, 327 p. (H. H. Wolf)

83. DIX, Charles E. A statistical comparison of the precordial electrocardiogram of gymnasts vs. non-gymnasts. M.A. in Physical Education, 1976, 95 p. (I. E. Faria)

84. ELLIOTT, Tamara L. Relationship of the physical biorhythm cycle to aerobic power in women gymnasts. M.A. in Physical Education, 1976, 48 p. (I. E. Faria)

85. FRANKEL, Marilyn. A comparison of percent of maximal oxygen uptake attained by gradually increasing heart rates on the bicycle ergometer and motorized treadmill. M.A. in Physical Education, 1976, 50 p. (I. E. Faria)

86. FRAZER, Christine E. The effect of trunk flexion and water pressure on total lung volume and the pulmonary subdivisions. M.A. in Physical Education, 1975, 91 p. (W. A. Bynum)

87. MARKLEY, Norma J. An assessment of knowledge and understanding of physical education in two senior high schools in the Grant Joint Union High School District. M.A. in Physical Education, 1976, 72 p. (B. A. Bartee)

88. NIEMAND, David A. Personality characteristics of selected male and female intercollegiate gymnasts. M.A. in Physical Education, 1975, 64 p. (F. B. Jones)

89. PELTON, Virginia L. Participation in sports, dance, and recreational games before the sixth century B.C. by women in ancient Egypt and Greece. M.A. in Physical Education, 1976, 37 p. (K. Scarborough)

90. SMITH, Jami H. A catalog of slides based on selected styles and movements in western art history representing sports in painting. M.A. in Physical Education, 1976, 236 p. (F. B. Lewis)

91. STAVIS, Roberta D. The relationship of selected anthropometric measurements and speed of running the fifty-yard dash in girls and young women. M.A. in Physical Education, 1976, 87 p. (B. A. Bartee)

92. STRANGIO, Francisco S. The development of a manual for teaching a boy's high school physical education karate program in California, grades 10-12. M.A. in Physical Education, 1976, 220 p. (H. H. Wolf)

93. SUMMERS, Alice M. A survey of physical education facilities for seventh and eighth grade schools in selected areas of the United States. M.A. in Physical Education, 1975, 111 p. (B. A. Bartee)

94. TAVELLA, Ernest J. The development of a manual of offense for the novice coach of water polo. M.A. in Physical Education, 1976, 110 p. (H. H. Wolf)

95. TEMPLE, Jacquelyn. Effects of knee flexibility modification on strength of the extensors and flexors of the lower leg. M.A. in Physical Education, 1976, 38 p. (I. E. Faria)

96. THOMAS, Claudean. Prepare the dancer to create. M.A. in Physical Education, 1976, 46 p. (F. Furukawa)

CENTRAL MICHIGAN UNIVERSITY
MT. PLEASANT, MICHIGAN (E. Way)

97. ALLEN, Barbara A. A comparison of gate receipts to won-loss records of schools in the Tri-central conference during the 1968-1973 football and basketball seasons. Physical Education Specialist, 1975, 46 p. (W. Sauter)

Fine SAS yielded results of football and basketball won-loss records and gate receipts. There was a significant relationship between winning seasons and gate receipts when the 5 schools were grouped. In only 2 instances (basketball) were relationships significant when single schools were studied.

98. KEILITZ, David B. The history of baseball at Central Michigan University, 1896-1973. Physical Education Specialist, 1975, 138 p. (W. Sauter)

Baseball at CMU started with a 1 game season in 1896 and currently has a 40 game season. 4 coaches have been highly influential in the development of the sport.

99. KOSCHAK, Elenore P. The influence of music on physical performance of women. Physical Education Specialist, 1975, 27 p. (W. Sauter)

College women (N=58) did 4 selected exercises with and without musical accompaniment. Push-ups were significantly affected by music ($p < .05$). Musical accompaniment for the 2nd trial of a 2 trial sequence tends to produce improvement.

100. PETERS, Janet L. An individual approach to aquatic instruction through video-taping, film loops, and instructional guides. M.A. in Physical Education, 1976, 124 p. (E. E. Way)

With the use of the indicated aids, it was intended that a person beyond the basic water adjustment level could improve his swimming skills with less than average personal assistance from the instructor. The program with 7th and 8th grade students was deemed successful.

101. RADLINSKI, Angela M. The effects of various motivational conditions upon the performance of the flexed arm hang in college women. M.A. in Physical Education, 1975, 26 p. (E. E. Way)

College women (N=90) were placed randomly into 6 groups. Half of the group performed without KR. 3 motivational conditions were used: No motivation, negative verbal motivation, and positive verbal motivation. No significant differences were found between motivational conditions nor did immediate KR provide a significant difference from the performance without KR.

102. RAY, Thomas H. Pain tolerance differences between college football starters and nonstarters. M.A. in Physical Education, 1976, 23 p. (J. Hornak)

College football starters and nonstarters (N=70) were also classified by position. The gross pressure pain test was administered on the legs. Scores were analyzed by ANOVA. No significant differences were found between starters and nonstarters. Pain tolerance of those playing in different positions did not differ significantly.

103. SCHMIDT, Roger N. The hand phase of the pole vault and its effect on height obtained. M.A. in Physical Education, 1975, 31 p. (E. E. Way)

The study was limited to 4 pole vaulters. Practice was given in the hang position with apparatus constructed to allow the vaulter to assume and hold the power position. Improvement of pole vaulting appears to occur with an increase in the length of time the power position can be held.

104. SWINEHART, Riley S. A history of physical education at Grand Valley State Colleges. Physical Education Specialist, 1976, 87 p. (W. Sauter)

The study deals with the 15 yr history of the colleges. Improvement of facilities and equipment has been a major aspect in the growth of the dept at this relatively new institution. A major and minor in PE is now offered.

105. TOMOCIK, Ronald T. A comparison of temperament between female individual sport athletes and female team sport athletes. M.A. in Physical Education, 1975, 38 p. (E. E. Way)

The Beusay Exp Survey of Temperament was used to identify 5 traits: persistence, competitiveness, confidence, mental-toughness, and self-control. Basketball players (N=18), gymnasts (N=9), swimmers (N=9), and track and field competitors (N=21) were compared to a general population (N=422). No significant differences were found among the small groups. Basketball, swimming and track and field athletes were lower ($p < .05$) than the general population in competitiveness; basketball and track and field, lower ($p < .05$) in mental-toughness; and gymnasts higher ($p < .05$) in persistence.

106. VAN WOERKOM, Carol L. The relationship between laterality-directionality and reading readiness in kindergarten children. M.A. in Physical Education, 1976, 31 p. (W. L. Geiger)

Preschool children (N=35) were given a test for physical development and The Metropolitan Readiness Test. Significant ($p < .05$) negative relationships existed between laterality-directionality/reading readiness and 1-d ages. Significant interrelationships were found among word meaning, matching, alphabet, and numbers.

107. WEISLER, David L. The power of the push-off leg in relation to the velocity of the overhand fastball of baseball pitchers. M.A. in Physical Education, 1976, 28 p. (W. Sauter)

CENTRAL WASHINGTON STATE COLLEGE (John M. Pearson)
ELLENSBURG, WASHINGTON

108. ADKINS, Doug. Comparison of short interval training and continuous jogging training for football during the competitive season. M.Ed. in Physical Education, 1976, 7[illegible] p. (R. N. Irving, Jr.)

109. AHO, Larry R. Effects of increased forearm grip strength on the bat swing velocity and bat swing force of a batter's swing in baseball. M.Ed. in Physical Education, 1976, 101 p. (J. G. Nylander)

110. AUSTIN, Charles C. A differential study of the relationship between perceptual-motor skills and scholastic achievement. M.Ed. in Physical Education, 1976, 51 p. (R. N. Irving, Jr.)

Scholastic achievement (reading, math, and spelling), as measured by the Wide Range Achievement Test, and perceptual motor ability, as measured by a modified Kephart-Roach Perceptual Motor Survey, were used to determine effectiveness of a perceptual-motor activity program. The exp group (selected P-M activities) (N=9) and control group (traditional PE) (N=6) were given a pretest, a test at the conclusion of activities (posttest), and then a test 3 mo later. ANOVA AND t ratios were used to determine significant differences ($p < .05$) between each testing session for each group and then between groups. Conclusions were: the P-M group was superior immediately after the P-M program and, also, 3 mo later, and the control group made a significant improvement in spelling between the posttest and 3 mo later test.

111. STOCKTON, Leslie L. The effect of selected conditioning methods on physical fitness levels of ninth and tenth grade girls. M.Ed. in Physical Education, 1976, 122 p. (R. N. Irving, Jr.)

9th and 10th grade girls at Bellingham HS were randomly assigned to 4 different conditioning programs: calisthenic/aerobic (N=19), aerobic (N=26), calisthenic/shuffling (N=31), and calisthenic (N=26). The effectiveness of these conditioning programs in developing cardiovascular efficiency as measured by the Cotten Modified Step Test and musuclar strength and muscular endurance as measured by the Oregon Simplification of the PFI was determined; statistical procedures included ANCOVA, Scheffé's post-hoc analysis, and t ratios. Conclusions were: aerobic conditioning produced significant performance ($p < .05$) in cardiovascular efficiency; calisthenic conditioning produced greatest performance ($p < .05$) in muscular strength and muscular endurance.

112. WALLEY, Colleen P. A comparative study of values between male and female intercollegiate basketball players at Central Washington State College. M.Ed. in Physical Education, 1976, 52 p. (J. G. Nylander)

The Allport, Vernon, and Lindzey Study of Values Test was administered to male ($N=20$) and female ($N=22$) varsity and jr varsity college baskeball players. The t test of significance was used to determine significant differences ($p < .05$) for the subcategories; theoretical, economic, aesthetic, social, political, and religious. The women scored significantly higher on the social sub-category; the men scored significantly higher on the political sub-category.

COLORADO STATE UNIVERSITY (R. D. Clayton)
FORT COLLINS, COLORADO

113. ASMUSSEN, Kelly J. The relationship of six selected factors to winning in basektball. M.Ed., 1976, 47 p. (J. Nettleton)

To determine the relationship of key factors in basketball (field goal attempts, field goals made, free throw attempts, free throws made, total rebounds, and home court advantage) to winning, the 1971-76 basketball seasons of teams in the Western Athletic Conference were studied. Each category studied, except for home court advantage, was evaluated by the t test. The relationship of home court advantage to winning was evaluated by the X^2 technique. The .05 level of confidence was selected. Conclusions were: field goals made, free throws attempted and made, total rebounds and home court advantage were all significant to winning; each of the 8 conference teams had at least 1 of the 6 key factors significant to winning; and total rebounds and free throws made were significant to winning more often than any of the other selected factors.

114. CRIST, Wesley A. A five-day-a-week versus a three-day-a-week physical education program. M.Ed., 1976, 39 p. (A. Pettine)

To determine if there was a significant difference between a 3 day a wk and a 5 day a wk PE program, 1st grade students at 2 ELE schools in CO were administered the Hughes Basic Gross Motor Assessment. The 5 day a wk PE program involved 15 boys and 7 girls. 27 boys and 27 girls participated in the 3 day a wk PE program at another school. The t test was used to analyze the data. There was a significant difference in favor of the males on the yo-yo item of the test battery, while the females were significantly better on the locomotor item of the test battery. The females were also within .064 of being significant on the stride jump item of the Hughes test battery. The stride jump test results showed a significantly higher score for the 5 day a wk students as compared to those having had a 3 day a wk PE program.

115. HANCOCK, John T. A survey of offensive errors in football games. M.Ed., 1976, 55 p. (A. Pettine)
To examine the frequency and negative effect of errors that impede the progress of offensive football teams during the course of a game, the specific errors committed by CSU and opponents in games played during the 1973, 1974, and 1975 football seasons were analyzed. The specific errors surveyed were pass interceptions and fumbles lost; fumbles not lost, but no yardage gain or yardage lost on the play; penalties assessed against the offensive team; and punt situations where a net gain of 38 yds or more was not achieved. The data were gathered through the use of game films and individual game play-by-play sheets of the 3 seasons. Conclusions relating to the no. of possessions or plays per game, fumbles lost or pass interceptions, punt errors by teams behind in the score, and frequency of errors committed in the last 5 min of the same quarter were made.

116. HORNER, Susan L. Relationship of coronary heart disease risk factors to vocational stresses of university administrators. M.Ed., 1975, 89 p. (A. Pettine)
To determine whether there was any relationship between some cardiac risk factors (hypertension, smoking, diabetes, heredity, insufficient exercise, and personality type) and electrocardiogram changes, 10 university administrators were studied over a 12 hr period of time. The data recorded included a resting Lead II electrocardiogram and a continuous recording of the heart's electrical activity by the use of a 4 hr halter electrocardiorecorder. Other data gathered were a patient activity history, obesity (lean body mass and % body fat using the 40_k whole body counting technique), blood pressure, and a recorded list of the period's activities. Analysis of data, using appropriate X^2 and Wilcoxon non-parametric techniques were used. In this population, no significant differences in these risk factors at the .05 level were noted in the group showing changes as compared with the group showing no changes during the recording period. Graded exercise stress tests further indicated all electrocardiogram changes were classified as "non-clinical" cases.

117. MC CLUSKEY, Karen A. Personality traits and participation in high risk vs. low risk sports. M.Ed., 1975 (K. Schaake)

To determine if there were significant differences in certain personality traits between those who participated in high risk vs. low risk sports at CSU during Spring Quarter, 1975, and to determine if there were significant differences in the same personality traits between those Ss who did travel vs. those who did not travel to represent CSU in intercollegiate competition, The Personality Research Form A was administered to 18 female tennis players, 4 male tennis players, 4 female ski-racers, and 11 male ski-racers. A 2-way factorial design was used to determine if any significant differences (.05 level) existed between each group. The selected personality traits were found for neither the high risk vs. low risk group, or the travel-no travel group. The aggression trait in the travel-no travel segment did approach significance.

118. MCNULTY, Kathleen. Personality factors and basketball officiating. M.Ed., 1976, 40 p. (A. Pettine)

This study examined the factors and qualities that characterize CO Northern Conference HS basketball officials, and obtained information from the state HS activity associations concerning characteristics and criteria for an on-going evaluation of basketball officials in their respective states. 15 officials were given the 16 PF Questionnaire, Form A. In addition, a questionnaire was sent to the executive officers in the 50 state HS basketball associations requesting information on the no. of basketball officials in each state, type of rating system used, requirements for certification, and requirements for maintaining the status of a certified official. The statistical analysis supported the hypothesis that there was no difference in personality traits between high, low, and least known officials. The results of the questionnaire supported the conclusion that state HS associations should, in conjunction with the National Federation of State HS Associations, cooperatively establish standard officiation procedures, rules interpretations, rating and certification standards, and evaluation procedures to eliminate the vast disparity that now exists among the states.

119. MONTGOMERY, Michael J. Personality traits of men and women basketball players at the college level. M.Ed., 1976.

The Athletic Motivation Inventory and Cattell's 16 PF were administered to the top 13 intercollegiate basketball players at Boise State University during the spring of 1976 to determine if there are personality trait differences between men and women basketball players at the college level. The raw data from both tests were compiled and computer programs run to tabulate correlations and t values for the AMI and Cattell's 16 PF. The results of this study showed that for the traits of drive, aggression, determination and self-confidence on the AMI, significant differences were found between men and women basketball players at the .05 level. There were no significant differences found for the traits of guilt-proneness, leadership, emotional control, mental toughness, coachability, conscientiousness, or trust on the AMI. The results on the 16 PF revealed significantly higher scores for men on Factors E (humble vs assertive) and H (shy vs venturesome). The correlation matrix revealed significant relationships between all of the traits on the AMI with factors on the 16 PF except coachability.

120. ROBINSON, Cheryl L. Riding instructor certification programs in horsemanship within a physical education curriculum. M.Ed., 1976, 116 p. (A. Pettine)

This study investigated the extent of the development of riding instructor certification programs at the college level within PE curricula and developed a model riding instructor certification program as part of a PE degree. A questionnaire was sent to 484, US, 4 yr institutions which offered a degree in PE for women. Of the 247 questionnaires returned, 86 institutions reported offering riding programs or courses of study in horsemanship. Credit for horsemanship courses was offered in 110 institutions. A description of the "typical" equitation course was made. Lists were made of schools that offered riding in their curricula or REC programs, the style(s) of riding taught, and the ability levels. A suggested program leading toward a B.S. degree in PE with certification in teaching riding was constructed.

121. SANDERS, Gary E. The Changing Scene: Denver's experimental theater. M.Ed., 1976. (I. Fagan)

A chronological description of The Changing Scene, a Denver, CO exp theatre, was done. 2 professional dancers from NY, Maxine Munt and Alfred Brooks, moved their modern dance studio to Denver in 1966. While the dance studio progressed, Munt and Brooks envisioned the concept of an exp theater where artists in dance, music, drama, film, and poetry could display their creative works free of restrictions. In 1968, The Changing Scene Theater became a reality. The study centered around the early yrs of Munt and Brooks in Denver. 1 major section focused on the growing pains, highlighting the problems encountered by the new exp theater. Another area featured the memorable productions which provide some insight into the quality and quantity of experiences of the artists involved. The Changing Scene became a viable, cultural asset to CO for the advancement of the arts.

122. VIGLIATURO, Joseph C. An evaluation of physical education in Colorado High Schools. M.Ed., 1976, 91 p. (A. Pettine)

To determine the present status and progress of PE in the public accredited SHSs of CO since 1955, the LaPorte HE and PE Education Score Card No. II was sent to principals of 175 CO HSs of class A, AA, and AAA size. The 138 returns were analyzed in relation to all items on the Score Card. Comparisons were made between CO scores of 1955 and 1975, and to national norms. Among the conclusions were: CO SHS PE programs were 50% effective in facilities, 53% effective in administration and 51% effective in the process and implementation of the total PE program as evaluated by the score card; Class A and AA school PE schools tend to offer a lesser program than class AAA schools; swimming and corrective activities are the most neglected areas of the PE programs; CO results of 1975 were 29% higher than a similar survey conducted in 1955; and CO SHS PE programs were not superior in any of the 10 areas of the score card.

123. WALLACE, Kathleen M. Body image of women athletes and non-athletes. M.Ed., 1976. (K. Schaake)

To determine if there were significant differences in body image scores between women competing in intercollegiate sports compared to women who were non-competitors, 42 college women athletes and 45 women in 2 PE activity classes were studied. Darden's Body Image Discrepancy Test was selected as the instrument to test the null hypothesis. Existing Body Image scores, Ideal Body Image scores, and Body Image Discrepancy scores of the women athletes and non-athletes were compared on a % basis and by using a X^2 test. Results supported the null hypothesis for the factors of Ideal Body Image and Body Image Discrepancy. The null hypothesis was rejected for the factor of Existing Body Image. Women athletes had an Existing Body Image which was significantly different from the Existing Body Image of women non-athletes. Results indicated that, as a group, women non-athletes were closer to perceiving themselves as "most feminine" than were women athletes. However, women athletes, as a group, perceived themselves as being closer to their Ideal Body Image than did women non-athletes. The Ideal Body Image of both groups was similar and indicated possible changes in the American woman's concept of femininity.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY (B. Gutin)
NEW YORK, NEW YORK

124. WARNER, Richard C. The effect of prior exercise on oxygen uptake and performance in an endurance task. Ed.D. in Applied Physiology, 1976, 93 p. (B. Gutin and K. Simon)

84 men, $\bar{X}$ age 27 yrs, were tested 2 times each on a treadmill. On the 1st visit a multi-stage exercise test was administered. For the 2nd test, Ss were randomly assigned to 1 of 4 prior exercise (PE) treatments: No PE, 25%, 50% or 75% of $\dot{V}O_2$ max. $\bar{X}$ HRs attained for each intensity were: 83 bpm at no PE, 95 bpm at PE 25%, 131 bpm at PE 50% and 165 bpm at PE 75%. After 3 min at the assigned PE, each S rested 30 sec, then ran at the speed and grade which had elicited 96-100% VO_2 max on the 1st visit. The time each S was able to continue was recorded as his score on the endurance task. The overall $\bar{X}$ time for the endurance task was 318 sec. The data were analyzed by ANOVA. There were no significant differences among the 4 PE treatments in endurance performance. VO_2, HR, V_E and O_2 pulse were compared for each 30 sec period of the 1st 3 min of the endurance task. For the 1st 2 min of the work, $\dot{V}O_2$, HR, V_E and O_2 pulse were significantly elevated in proportion to the intensity of the PE with the magnitude of the difference diminishing with time. After 2 min of the task had elapsed, none of the differences of the physiological parameters were significant. Thus, no evidence was produced that a short bout of PE followed by a short rest period enhances endurance performance, even though some degree of mobilization of O_2 transport did occur in the initial stages.

EAST CAROLINA UNIVERSITY (Robert B. Gantt)
GREENVILLE, NORTH CAROLINA

125. CATES, Tony W. A comparative study of points of aim and their relationship in shooting accuracy at different angles in men's basketball. M.A. in Physical Education, 1976, 52 p. (J. R. Grimsley)

College male Ss (N=35) were divided into 3 groups and pretested on basketball shooting accuracy at 4 different positions established 15 ft from the basket. 12 practice sessions involving 10 trials at each station (total of 40 trials per session) were then conducted as follows: Group A used the rim as a point of aim; Group B aimed at the backboard; Group C (control group) experienced no shooting practice. Based on improvement from pretest scores, Groups B and C improved ($p < .05$) at only 1 of the 4 positions, while Group A failed to improve at any shooting position. ANOVA revealed no significant differences among groups.

126. KING, William B. A comparison of three methods of initial arm movement following a competitive freestyle turn. M.A., 1976, 100 p. (R. H. Martinez)

College and SHS competitive swimmers (N=12) were tested at distances of 5, 10, 15, and 25 yds from the wall while using 3 different techniques of arm pulls from a freestyle-turn thrust position. 4 20-min training sessions were conducted on a technique prior to testing. Training and testing were counter balanced. Aiming devices and electronic timers calibrated at .01 sec were used to collect $\bar{X}$ times, based on 15 trials at each distance for each swimmer. ANOVA and orthogonal comparisons were used to analyze data. Conclusions of the study were: the alternate-arm pull is superior to an average of the $\bar{X}$s of the double-arm pull and the surrogate alternate-arm pull methods at 5, 10, and 25 yd intervals. The double-arm pull is superior to the surrogate alternate-arm pull at 10 and 25 yds.

127. MERRIFIELD, Mary V. A comparative study of two methods of teaching beginning swimming. M.A., 1976, 53 p. (R. H. Martinez)

8 yr old ELE Ss ($N=22$) were divided into a "traditional method group" and a "movement-education method group" for swim instruction. 8 1-hr training sessions were scheduled for each group. A panel of 3 experts administered a pretest and posttest based on a 5 item scorecard devised to indicate skill in swim techniques. A blind technique was used in scoring, and Ss were unaware that they were being evaluated on test days. Data were analyzed by t tests. Both groups improved in swim skills ($p < .01$), but the gains of the 2 groups were not significantly different.

128. SINK, Stephen C. An investigation of the East Carolina University sports medicine method of gaining flexibility. M.A., 1976, 40 p. (R. H. Martinez)

College male Ss ($N=24$) were placed in either a control group or 1 of 3 training groups to determine the immediate and prolonged training effects of different time periods (3, 6 and 9 sec) of static contractions of the extensors of the femur at the hip joint on flexibility as measured by the Wells and Dillon sit-and-reach test. On day 1 of the study, pretests were administered prior to a training bout involving 3 contractions at specificed time frames. Posttest measures were then taken to determine the immediate effects. A t test indicated immediate gains as follows: 3 sec group ($p < .05$), 6 sec and 9 sec groups ($p < .01$), control group ($p > .05$). The Scheffé test revealed that gains of the 6 and 9 sec groups were superior to the control Ss. Following 20 days of training at the specified time frames, preexercise scores were compared to pretest scores of day 1. A t test indicated all groups except control Ss improved flexibility. ANOVA revealed a difference among groups ($p < .01$), and Scheffé indicated that 6 and 9 sec groups improved more than control Ss ($p < .05$), and the 6 sec group improved more than the 3 sec group ($p < .05$). Thus, the $\bar{X}$ gain (13.25 in.) of the 6 sec group over a 20 day training period indicates this to be a feasible time frame for prolonged training to enhance flexibility.

129. WRENN, Jack. A history of intercollegiate football at East Carolina University from 1932 through 1975. M.A. in Education, 1976, 283 p. (J. R. Grimsley)

EAST STROUDSBURG STATE COLLEGE (B. Burris)
EAST STROUDSBURG, PENNSYLVANIA

130. BARANOWSKI, Carolyn. Effect of smoking withdrawal on pulmonary function among women. M.S. in Physical Education, 1976, 109 p. (H. Weber)

Measurements of lung volumes, capacities and flow rates, resting $\dot{V}O_2$, predicted max $\dot{V}O_2$, D_L, V_E, MVV, body wt, BSA, and BP were administered to 3 groups of women, smoking (N=10), non-smoking (N=10) and smoking withdrawal (N=7). All Ss were retested in 8 wks; the withdrawal group increased significantly in IC and FEV - 1 sec ($p < .05$). No other changes were significant ($p > .05$).

131. BOSCH, Edward J. An analysis of pacing of the three and six mile runs in intercollegiate track and field. M.Ed. in Health and Physical Education, 1976, 77 p. (R. DeSchriver)

Several methods of analyzing evenness of pace were employed to analyze the 3 and 6 mi run times of eastern collegiate runners and to relate these measures of pace to success as measured by place and time in the race. Calculations of X^2 and a subsequent phi coefficient revealed statistically significant relationships between pace and performance.

132. DEER, Susan D. The relationship between levels of aerobic training, need achievement, and pain tolerance. M.S. in Physical Education, 1975, 112 p. (B. Burris)

Female college students (N=50) were divided into 5 groups: trained athletes, untrained athletes (no training program), untrained athletes (training program), non-athletes (no training program) and non-athletes (training program). All Ss were initially tested on pain tolerance (PT), max $\dot{V}O_2$, and need achievement motivation (NAM) using Herrenkohl's achievement orientation analysis. 2 groups were trained using a 4 wk aerobic interval training program, and all Ss were retested on PT and NAM. In the initial testing, 1-way ANOVA revealed significant differences between the groups in 4 of the NAM factors, and PT of trained athletes was significantly higher than untrained and non-athletes ($p < .05$). Training groups significantly increased PT ($p < .05$) and changed on 1 NAM factor.

133. ECKMAN, John D. Strength versus power curves in isokinetic exercise. M.Ed. in Health and Physical Education, 1975. 40 p. (A. L. Olson)
Force and power values at 30°, 45°, 60° and peak torque were recorded for elbow flexion and knee extension for 50 college men. The study was designed to determine the rate of movement at which power exceeds force in an isokinetic exercise. A subproblem was designed to determine at what angle of motion the peak torque occurred for each joint at each speed tested (2, 5, 10, 15, 20, and 25 RPMs). The results indicated that, under all the conditions tested, the rate of speed where power exceeded force was between 5.01 and 5.50 RPMs. The peak torque for the knee joint always occurred nearly 30° earlier than it did for the elbow joint ($p < .05$). It is suggested that the arbitrarily selected scaling of the power and force values in studies of this type may be influencing the RPM point where power exceeds force.

134. HERBER, John T. The effects of acute dehydration on high school wrestlers. M.Ed. in Health and Physical Education, 1976, 44 p. (H. Weber)
Measurements of grip strength, MT, exercise time to HR 170, recovery HR, and exercise wt loss were taken on SHS wrestlers ($N = 9$) under conditions of no dehydration, 2% loss of body wt, and 4% loss of body wt through dehydration. ANOVA revealed no significant difference in MT and grip strength ($p > .05$). Acute dehydration (4%) significantly increased recovery HR ($p < .05$), and wt loss due to perspiration was significantly lower ($p < .05$) in both 2% and 4% dehydration.

135. METZLER, Michael W. The effects of a planned intervention upon selected student teacher and pupil behaviors. M.Ed. in Health and Physical Education, 1976, 84 p. (A. L. Olson)
5 student teachers, along with their respective classes, served as Ss. The observed student teacher behaviors were: positive skill attempt feedback, negative skill attempt feedback, positive non-skill attempt feedback, and negative non-skill attempt feedback. The selected pupil behaviors were classified as: active/inactive and appropriate/inappropriate. The basic design was a multiple baseline. Baseline rates of the selected behaviors were determined with event recording and Placheck recording techniques. The intervention was introduced to the student teachers according to the guidelines of the multiple baseline design. The intervention consisted of 3 parts: a reading sheet, a feedback session, and establishing of behavioral goals. After intervention, rates of the selected behaviors were again determined and compared with baseline rates to determine effects of the intervention upon student teachers'

behaviors. It was determined that changes were brought about in every behavior category observed. With 1 exception, all changes were in the desired direction. The hypothesis that intervention was the cause of these changes was accepted.

136. MINNIER, Mary A. An investigation of anthropometric changes of 15 and 16 year old females during the tenth grade year. M.S. in Physical Education, 1975, 79 p. (H. Weber)

A series of anthropometric measurements were made on 10th grade girls at the beginning of the school yr and at the end of that school yr. Body fat did not increase significantly; however, the majority of girth and linearity measures did increase significantly ($p < .05$). Adipose tissue was redistributed from certain areas to others. Correlations revealed that ht and wt did not change together; however, girth and wt were correlated. Total body fat was best predicted by triceps, suprailiac, umbilicus and subscapular skinfolds.

137. TOMASI, Louis F. Recovery following isometric and isokinetic exercise. M.S. in Physical Education, 1975, 51 p. (A. L. Olson)

29 Ss exercised with medial rotation of the humerus on the cybex apparatus with max effort of 5 sec work followed by 5 sec rest for a total of 175 sec either with isometric or isokinetic (3 RPMs) exercise. There was 90 sec of actual exercise. Strength decrements were recorded at 0-5, 30-35, 60-65, 90-95, 120-125, 150-155, and 170-175 sec after the initiation of the exercise. The recovery strength gains were recorded at 10, 35, 70, 105, 140, and 175 sec post-exercise. The recovery strength for each S was only recorded for 1 recovery time following a single fatiguing effort. This order was assigned at random and repeated until each S had 2 recovery strength measures at each of the 12 post-exercise recording times. The reliability of the strength measurements was found to be 0.95. Pilot study established that 3 trials were sufficient to adjust to the procedures. ANOVA revealed that the Ss generally recovered from the isometric and the isokinetic exercise at 10 sec post-exercise. The strength decrements were also very similar and were about 30%. The recovery to 100% of initial strength was more rapid in the isokinetic group—70 sec vs 175 sec.

138. ZANG, Kathleen M. An analysis of selected aspects of the treatment of sport as reflected in the content of Sports Illustrated from the inception of the magazine, 1954-1975. M.S. in Physical Education, 1976, 128 p. (J. Felshin)

An analysis of the content of Sports Illustrated was undertaken for a 21 yr period. Articles were classified according to specific sport areas, categories of amateur, professional or general affiliation, and certain prominent themes. The sports of baseball, golf, football, fishing and horse racing ranked high in appearance during the earlier yrs. In the more recent yrs studied, basketball, ice hockey, tennis, and track and field improved their rankings while boxing and fishing dropped substantially. Professional, amateur and general sport content was represented equally during these initial yrs of the investigation. During the final half of the period studied, amateur content remained stable, professional content increased, and general content correspondingly decreased. 27 themes relating to areas extrinsic to the domain of sport were identified, with sport and commercialism the most prominent among them. Sports Illustrated is a spectator-oriented sports weekly that emphasizes relatively few sport areas, most of which are associated with highly organized professional contexts.

EASTERN ILLINOIS UNIVERSITY (Walter S. Lowell)
CHARLESTON, ILLINOIS

139. BEDFORD, Toby. The effects of a calisthenics exercise program on fourth grade elementary school children. M.S. in Physical Education, 1976, 46 p. (M. Thomas Woodall)
18 4th grade Ss participated in an exercise program of 6 wk duration involving 8 20 sec bouts of calisthenics with 20 sec rest between bouts; bouts were 5 min long, 3 times/wk. 18 4th grade Ss worked with the Nelson Finger Reaction Timer Stick, a sedentary activity, during the exercise period. No significant difference was found between groups on the Modified Harvard Step Test, 9 min run, ht, wt, or skinfold measures.

140. HILL, Terry T. The history of men's intercollegiate sports at Danville Junior College, Danville, Illinois. M.S. in Physical Education, 1976, 146 p. (W. S. Lowell)
The history of men's intercollegiate athleteics at DJC is traced from the origin in 1947 to 1976.

141. MEISNER, Johnie H. The history of intercollegiate track and field at Eastern Illinois University from 1967 through 1976. M.S. in Education, 1976, 138 p. (W. S. Lowell)
This study, and a previous thesis completed in 1967, gives EIU a complete history of track and field from the inception of the program in 1912 through the 1976 season. EIU gained national prominence in NCAA, Div. II, during this period including a 1st place tie.

142. RIOS, Wilfredo. *Norms for a twelve-minute run/walk test for the Jefferson Elementary School, grades 3-6*. M.S. in Physical Education, 1976, 31 p. (M. Thomas Woodall)

201 *Ss*, 96 girls and 105 boys, from grades 3, 4, 5 and 6, took the 12 min run/walk test. Results suggest this test is a good tool to assess the cardiovascular fitness of children. A longitudinal study with a greater no. of *Ss* is indicated.

143. TIMSON, Benjamin F. *Lactate removal from the blood of trained distance runners following strenuous intermittent exercise*. M.S. in Physical Education, 1976, 33 p. (M. Thomas Woodall)

5 *Ss* (M $\dot{V}O_2$ max, 69.79 ml/kg/min) were given 3 separate 30 min warm-down periods. Blood samples were analyzed for lactate 5, 15, and 30 min after max intermittent exercise. The Friedman ANOVA showed significant difference between the 3 methods. The 30 min, 8 mph jog was first, followed by the 4 mph walk. Sitting for 30 sec was least effective.

EASTERN KENTUCKY UNIVERSITY (Harold Z. Holmes, Jr.)
RICHMOND, KENTUCKY

144. GAUNT, Sharon J. *A cinematographic and comparative analysis of the basketball jump shot as performed by male and female shooters*. Ed.S. in Physical Education, 1976, 70 p. (H. Holmes)

Female (*N*=3) and male (*N*=3) varsity basketball players were filmed performing a jump shot at the free throw line. Primary phases of the shot studied were preparation for the jump, flight, ball release, and follow-through. Selected mechanical components of the jump shot were studied and compared among *Ss* of the same sex and between male and female groups. Time intervals of the phases and velocity and trajectory of the ball were calculated. Findings supported the following conclusions: performance of the jump shot varies among *Ss* of the same sex as well as between male and female shooters; although authorities recommend techniques which contribute to proper execution of the jump shot, these techniques are modified by various performers, thus there is a great deal of individuality in techniques used in execution of the jump shot.

145. JOHNS, Ellen J. *The development of a statistics sheet to aid a coach in the selection of female basketball scholarship athletes*. Ed.S. in Physical Education, 1976, 41 p. (A. Uhlir)

After reviewing literature, possible components of individual game play were listed and given to a sample of 10 veteran KY coaches. At least 8 favorable responses were needed for a component to be included. The sheet was implemented at the 1976

KY Girls' SHS Tournament. The Ss were the 80 starting players. At all opening round games, 5 raters used the sheet and 7 judges (college coaches from institutions granting female basketball scholarships) viewed the games and responded "yes" or "no" for scholarship consideration. The judges had a set criteria to implement. As the judges' votes were tabulated, a player with 4 or more "yes" votes was categorized for scholarship consideration. The sheet's reliability was .984 using Kendall's Coefficient of Concordance. Judges selected 9 players for scholarship consideration, 8 of whom received the 8 highest sheet totals. The statistics sheet was found a reliable and valid tool aiding in the selection process by separating the more highly skilled from the other players.

THE FLORIDA STATE UNIVERSITY (P. W. Everett)
TALLAHASSEE, FLORIDA

146. BENDER, Peter R. A developmental explanation of motor behavior: A neo-Piagetian interpretation. Ph.D. in Movement Science, 1976, 144 p. (R. N. Singer)

Support was provided for a neo-Piagetian explanation of motor behavior. A sample of 6, 8 and 10 yr old boys was screened for M-processing ability using the Figural Intersections Task. 15 high M-processors and 15 low M-processors were identified at each of the 3 age levels (total N=90). Using a linear positioning task, the Ss were tested for 2 levels of scheme activation which corresponded to the specific e + k and e + k + 1 neo-Piagetian M-space values. 3 dependent measures, correct score, constant error, and variable error were used to assess performance. Results supported the prediction of structural M-space as explaining the developmental nature of motor behavior, although the parameter k was shown to be lower than that indicated in the neo-Piagetian scale. Considerable functional M-space variability was demonstrated across and within age levels. High M-processors at 1 age level performed as well, or better, than low M-processors of the next higher age stage. Within each age group, the high M-processors performed significantly better than their low M-processor counterparts on the e + k and e + k + 1 tasks. Intra-group and inter-group performance variability was best discriminated by correct score and variable error.

147. BERNZ, Betty. The reliability of cardiac output, CO_2 rebreathing method. M.S. in Movement Science, 1976. (J. R. Thomas)

The reliability of cardiac output ($\dot{Q}$) and its components $\dot{V}CO_2$, $C\bar{v}_{CO_2}$, and Ca_{CO_2}, as determined by the CO_2 rebreathing exponential rise method, were investigated. Test-retests were administered to 23 (14 at each HR) well conditioned males during treadmill ergometry at each of the target HRs 102 bpm, 145 bpm, and 170 bpm. High reliability estimates were found for Q and its components. At the 3 target HRs the component $C\bar{v}_{CO_2}$ consistently yielded the lowest r. Suggestions were made for further research particularly for the component of $C\bar{v}_{CO_2}$ due to a less than ideal laboratory situation and questions pertaining to the method of data analysis.

148. BURGESS, Sharon S. Stimulus-seeking, extraversion, and neuroticism in regular, occasional, and non-exercisers. M.S. in Movement Science, 1976, 68 p. (D. Pargman)

To test the hypothesis that stimulus-seeking and extraversion underlie "exercise addiction" and sport involvement, relationships among stimulus-seeking, extraversion, and exercise frequency were examined in 90 males matched on age and educational level. The Stimulus Variation Seeking Scale (SSS) and Eysenck Personality Inventory (EPI) were administered to 30 regular (5 days/wk for $\geq$ 2 yr), 30 occasional (2-3 days/wk) and 30 non-exercisers ($\leq$ 1 day/wk). A stepwise discriminant analysis and step-down F procedure performed on the test scores revealed that regular and occasional exercisers scored significantly higher on the SSS Thrill and Adventure Seeking Scale and lower on the EPI Neuroticism Scale (N) than non-exercisers. (Although it was not originally deemed an important variable, N was included in the analysis as an EPI subscale.) Extraversion was positively correlated to stimulus-seeking but did not differentiate among groups. These results indicate that at least 1 form of stimulus-seeking, TA, may be a motivating force in physical activity and sport participation, but it does not distinguish Ss on the basis of exercise frequency and is not a factor in exercise addiction. Higher levels of stability in exercisers may reflect the feeling of well-being that they report gaining from vigorous physical activity, rather than being due to some emotional liability on the part of non-exercisers.

149. FARRELLY, John F. The effects of coactors, sex of coactors, and ability level upon performance of a simple motor task. Ph.D. in Physical Education, 1976, 133 p. (Janet Wells)

This study examined the interactive effects of alone, same and opposite sex coaction conditions, and ability level, upon performance of a simple motor task. Of 297 6th grade Ss pretested, 180 were selected, on the basis of pretest criterion scores, as high and low in ring-tossing ability. Each S was tested under 7 different conditions: with coactors of high ability, male (HAM); low ability, male (LAM); control, male (CM); high ability, female (HAF); low ability, female (LAF); control, female (CF); and alone (A). Ss threw 7 rope rings at a target over 10 blocks of 7 trials (70 throws). Significant main effects were obtained (2 X 2 X 7 ANOVA) between sexes, ability groups, and treatment conditions. High ability female Ss showed impaired performance with male coactors when compared with female coactors or the alone condition. High ability male Ss performed the task better with coactors of high ability, regardless of sex, and considerably worse [illegible]en in the alone condition. There was no significant difference between the low ability groups across conditions.

150. HALLIWELL, Wayne R. The influence of cognitive development and alternative media upon causal attributions in social perception. Ph.D. in Movement Science, 1976. (R. N. Singer)

The influence of cognitive development and alternative media upon causal analyses of social perception problems was examined. Reward-nonreward story-pairs were presented via audiotape and videotape to samples of 12 male and 12 female students from K through grade 5. 10th grade students served as a control group. A developmental trend in causal inferences was found as use of an additive schema decreased while use of a multiplicative schema increased with age. Specifically, responses of K and 1st grade children to multiple dependent measures indicated that a rewarded person was most intrinsically motivated to engage in a target activity. On the other hand, the causal attributions of 2nd grade and older children revealed use of the discounting principle and multiple sufficient cause schema. This developmental sequence in causal inferences was accounted for within a neo-Piagetian theoretical framework. The medium of presentation of social perception problems had a significant influence upon causal analyses as videotape, relative to audiotape, facilitated use of the discounting principle. These findings indicated that causal reasoning appears to be a function of both a child's cognitive maturity and the medium through which social perception cues are transmitted. No sex differences were reported in the formulation of causal attributions.

151. INOMATA, Kimihiro. The function of selected abilities and cognitive strategies in motor skill learning. Ph.D. in Movement Science, 1975, 169 p. (R. N. Singer)

The function of selected abilities and cognitive strategies in learning a pursuit rotor task under different task situational constraints were investigated, using a combination of correlational and exp techniques. Female college students (N=130) were equally assigned to 4 groups: control, reference, speed, and accuracy. All groups were administered selected preability tests. Then Ss in the reference, speed, and accuracy groups practiced the pursuit rotor task under different conditions: non-emphasis, speed emphasis, or accuracy emphasis. The control group was not permitted to practice the task. After practice periods, the reference, speed, and accuracy groups were administered a questionnaire in regard to the learning strategies they used. The control and reference groups also received post-ability tests. Results indicated that there was no significant transfer effect of learning the skill on the selected abilities. The correlational relationships between the selected abilities and cognitive strategies were not significant. The function of the strategy factors in learning were differentiated under the instructional trade-off conditions (speed or accuracy emphasis). No differential functions were observed with regard to the ability factors and learning situations.

152. KING, Bruce E. The relationship of "half-life" heart rate recovery, physical efficiency index, and maximum oxygen consumption. M.S. in Physical Education, 1976, 70 p. (P. W. Everett)

The relationship between performance on the Harvard Step Test (HST) and "half-life" HR recoveries with the individual's max O_2 consumption was investigated. It was hypothesized that the correlation coefficients between any of the parameters would not be different from 0. The HST and a test of max O_2 consumption were given to 32 Ss. Upon completion of the exercises, HRs were obtained in 10 sec intervals from which both the Physical Efficiency Index (PEI) and "half-life" values were calculated. $\overline{X}$s were determined for each of the parameters and compared to those obtained in previous research. Pairwise correlation coefficients were calculated between each of the groups. Of the 6, only the correlation between max O_2 consumption and the PEI score (.480) proved to be significantly different from 0 at the .05 level. While both PEI scores and max O_2 consumption values showed a degree of consistency, "half-life" recoveries were neither similar to those obtained in previous research nor were they consistent from test to test. It was concluded that the HST was a fair indicator of cardiovascular fitness (as measured by max O2 consumption) but that "half-life" HR recoveries were not.

153. LONG, Curtiss M. A history of the male varsity track and field program at Florida State University from 1948-1974. Ph.D. in Physical Education, 1976, 568 p. (K. D. Miller)

The study was delimited to the male varsity track and field program at FSU during the period 1948-1974, and included both indoor and outdoor competition with the exclusion of cross-country, separate freshman competition, and intrasquad events. The 26 yr period of track and field history was sub-divided into 5 eras created by natural grouping of events due to team success and 1 head coaching change. Emphasis in the study was placed upon the performances of the superlative athletes who set the records, but special attention was paid to the men whose 2nd and 3rd place efforts often made the difference between defeat and victory. The study explored the influence exerted on the track program by the following factors: budget, recruiting, mode of travel, facilities, and personality and philosophy of the coaches. A complete factual record was developed for each yr from meet results, including place of finish, performance standards, location of the meet, and schools competing. Additional data included in the appendices were a chronological listing of all school records and outstanding performances, and a team roster listing name and varsity letter awards.

154. MC CAUGHAN, Lindsay R. Performance as a function of attribution, expectancy, and achievement motivation, induced by two feedback conditions during learning of a novel motor task. Ph.D. in Movement Science, 1976, 142 p. (Robert N. Singer)

Several cognitive motivational theories including achievement motivation, attribution theory, and an attributional theory of performance were linked to ascertain prediction for psychomotor performance. The underlying theoretical rationale was then tested on 120 male SHS Ss. 60 high and 60 low need achievers (nach) were randomly placed into success and failure feedback conditions, and performance scores on a novel psychomotor task were assessed. Following each block of performance trials, fictitious feedback in the form of success and failure information was given, and then each S rated attribution and expectancy questionnaires. Neither high nor low nach made disparate attributional ratings, but the situational effects of success and failure supported attribution theory. Success feedback elicited internal attributions among the Ss, while Ss receiving failure experiences externalized attributions. Expectancies for future performance improved more following success than after failure and were generally predicted by attributions to stable elements. Although trends were present, performance scores were unaffected by these cognitive beliefs. However, significant prediction for performance was obtained when stepwise multiple regression procedures were used with constant error as the criterion variable. The factors of expectancy and luck significantly predicted performance.

155. SCARBROUGH, Anne L. A study of the relationship between student and teacher cognitive styles and grades in physical education. Ph.D. in Physical Education, 1976, 203 p. (Janet Wells)

The relationship betwen the collective cognitive style profiles of 6 groups of Ss (all students, female students, male students, all teachers, female teachers, and male teachers), % of cognitive style match, and grades earned by PE students in the selected classes was investigated. The "Educational Sciences" Cognitive Style Mapping-Interest Inventory (Joseph E. Hill, Oakland Community College, Bloomfield Hills, MI), modified specifically for PE, was used to assess 16 elements of style in a "discipline-specific" framework. The findings reflected the current practices of grading inherent within traditional programs in which the teacher has a pre-determined stance identifying appropriate and inappropriate behaviors or tasks, and the student is disadvantaged if he does not possess a similar system of processing information. Persons involved in PE, as a current or prospective vocation, were identified as having the ability to perform motor skills according to acceptable patterns and to synthesize at once a no. of interrelated tasks. The evidence showed physical educators infer meaning by methods of categorical reasoning or by thinking leading to a synthesis of the task or problem.

156. WIKOFF, Oren D. Proposed guidelines for competency-based secondary physical education curriculum revision at Georgia Southwestern College. Ph.D. in Physical Education, 1976, 193 p. (Janet Wells)

The 277 AAHPER Professional Preparation Competencies were rated by the GSC PE faculty and the secondary school PE teachers in Georgia's educational districts 11 and 12. The teacher ratings were based upon the frequencies that the competencies were utilized by the secondary PE teacher and the expected frequency for the beginning teacher. The college faculty rated the value of the competenices and then determined the amount of instructional time that was actually allotted in the required PE majors' courses for each of the 277 competencies. Proposed guidelines for curriculum revision in the PE dept at GSC were based upon the competencies that were indicated as being essential to the secondary school PE teacher by teachers in the field and by faculty and were reviewed by the Professional Curriculum Committee at GSC.

GEORGE PEABODY COLLEGE FOR TEACHERS (Dewayne Johnson)
NASHVILLE, TENNESSEE

157. BLACK, Richard R. The use of individualized materials and self-management training techniques in developing competency in competitive gymnastics. D.Ed. in Health and Physical Education, 1976, 173 p. (L. Garrett)

Individualized materials and self-management training techniques were developed for beginning male competitive gymnasts and were tested (exp-control) at the JHS level. Correlations determined relationships among 13 parameters; ANOVA identified and compared pre-post changes. Parameters were: trunk flexion, pull-ups, dips, handstand, triceps skinfold, wt, ht, and scores from each of the 6 men's Olympic gymnastic events. 6 wks of practice and competition were associated with a gain in trunk flexion, pull-ups, and dips, and with a loss in superficial fat. Skill improved in 5 of the Olympic events. Flexibility and handstand were predictive of skill scores on 5 gymnastic events. In general the control and exp groups improved at about the same rate in regard to the physical traits and skill scores. On 1 Olympic event, the still rings, the exp group showed significantly greater improvement.

158. OLIVER, Robert A. A study of the effect of a cold water bath on specific physiological functions. Ph.D. in Health and Physical Education, 1976, 215 p. (D. Johnson)
The purpose of this study was to determine the effect of a 30 min cold water bath on HR, blood pressure, intramuscular, cutaneous and oral temp, and plantar flexion strength, immediately after, and during a 3 hr post-treatment period. 20 Ss were tested twice, on 2 consecutive wks. Measurements were taken prior to the treatment period, immediately after, and then every 30 min for 3 hrs. The dominant leg was submerged into 50°F water for 30 min. Plantar flexion strength was measured with a cable tensiometer. Intramuscular temp was measured with a hypodermic thermistor probe. Cutaneous temp was measured with a surface temp probe. Oral temp was measured with an oral thermometer. Blood pressure was determined by the ausculatory method. HR was recorded at the brachial artery. Data were analyzed with ANOVA for repeated measures. The Tukey method was used when a significant F was obtained. The Pearson-Product Moment Correlation was used. Results indicated that HR, blood pressure, and oral temp were not affected by localized cooling. Significant decreases in intramuscular and cutaneous temp occurred imediately post-treatment on the exp days, followed by significant increases during the recovery period. Significant decreases occurred during the control session for intramuscular and cutaneous temp. Significant increases in strength occurred during the 3 hr post-treatment recovery of the exp days.

HOLLINS COLLEGE
HOLLINS COLLEGE, VIRGINIA

159. SACHS, Michael. The athletic personality type hypothesis: A study and critique. M.A., 1974, 72 p. (Art Poskocil)
An investigation of the athletic personality type hypothesis was conducted. 3 studies are presented—the 1st study involves an investigation of the differences in personality characteristics of female athletes participating in a team sport, an individual sport, and a team and individual sport; the 2nd study

involves an analysis of the differences in personality characteristics between women athletes participating in an individual intercollegiate sport, swimming, and a normative group of college women; the 3rd study is an investigation of the personality characteristics of the members of the Junior Davis Cup and Junior Wightman Cup teams of the Roanoke Valley, with comparisons between the Junior Wightman Cup team members and a normative group of SHS females, between the Junior Davis Cup team members and a normative group of SHS males, and between the Junior Davis Cup and Junior Wightman Cup team members. Significant differences that were found are reviewed within a total examination of the athletic personality type hypothesis. A review of the literature and evidence from these 3 studies indicates a need for a broader understanding of the dimensions of personality of the athlete. A situational determinants hypothesis that attempts to provide a clearer picture of the situationally specific factors operating in the athletic environment is presented.

ITHACA COLLEGE (C. Fisher)
ITHACA, NEW YORK

160. AHART, Frederick C. The effect of score differential on basketball free throw shooting efficiency. M.S. in Physical Education, 1973, 27 p. (C. Fisher)

Basketball free throw shooting efficiencies of the 1972-73 Roscoe Central School varsity team were compared against score differential categories (1-4, 5-8, and 9+ points ahead and behind). In the points ahead category, free throw efficiencies were 53%, 72%, and 55%, respectively; in the points behind category, free throw efficiencies were 50%, 69%, and 53%, respectively. Results were interpreted from the perspective of the inverted-U performance-arousal theory. McNemar's differences between proportions test revealed significant differences in free throw efficiency only in the 5-8 points ahead category where the team shot better than the expected efficiency (57%). Notwithstanding the statistical analysis, free throw efficiency exceeded the expected efficiency only under the 5-8 point differential (moderate activation?). Results provide partial support for the inverted-U theory.

161. BASLER, Philip K. Relationship between reaction time and football performance. M.S. in Physical Education, 1976, 35 p. (C. Fisher)

CRT and football performance of SHS varsity football athletes (N=25) from upstate NY were investigated. Each S performed 21 trials through a "run to daylight" photoelectric multi-stage timing device, 7 trials at each gate. Yds gained per carry was utilized as the measure of football performance. CRT was subjected to a 3 X 7 ANOVA to determine differences between gates and between trials. Intraclass correlation revealed a reliability coefficient of .73 for all trials across gates. CRT and yds gained per carry were subjected to correlational analysis. The resultant (r=-.17) revealed a negligible relationship between CRT and football performance. Although the "run to daylight" device was constructed to simulate the football environment, it appeared not to relate to the football performance utilized in this study.

162. BEAN, Ann S. Maximal grip strength and perceived tennis gripping force of college age females with various tennis experiences. M.S. in Physical Education, 1974, 51 p. (H. H. Morris)

Female Ss chosen randomly from 3 subpopulations of varying tennis experience were compared on max grip strength and the perceived exertion required to properly grip a tennis racquet while completing a forehand tennis stroke. Varsity tennis team members (N=15), majors (N=15) who had completed instruction in tennis, and college females (N=15) who had completed a general instruction course in tennis served as Ss. Max grip strength and perceived effort required to grip a tennis racquet were recorded on a cable tensiometer and T-5 orthopedic handle. No significant differences in max grip strength nor in the perception of gripping force for executing the forehand tennis stroke were recorded.

163. BLANK, Thomas G. The effects of varied foreperiod duration upon the components of fractionated reaction time. M.S. in Physical Education, 1975. 83 p. (H. H. Morris)

Variation in the length of the preparatory interval that preceded the onset of a single light stimulus across 4 days of testing upon RT and its fractionated components was examined. Ss were 25 male volunteers of college age who responded to 100 simple RT trials on each of 4 consecutive days. Muscle action potential of the extensor digitorum communis was monitored via EMG, which permitted the fractionation of simple RT into premotor and motor components. 4 preparatory intervals, 1, 2, 3, and 4 sec in duration, were randomly selected with the constraint that each foreperiod occurred 25 times each testing day. Additionally, 10 catch trials were randomly interspersed on each day. Separate ANOVA's were employed to examine the effects of foreperiod duration and days upon total RT, premotor time, and motor time. Total RT on days 3 and 4 were significantly faster when contrasted with days 1 and 2. Responses that followed 2 and 3 sec foreperiods were significantly faster than those following 1 and 4 sec intervals. Similar results were recorded for premotor time. Motor time tended to remain the same under the various conditions.

164. BOON, Marilyn. Relationship between arousal and gymnastic performance. M.S. in Physical Education, 1974, 82 p. (C. Fisher)

Arousal and anxiety correlates of gymnastic performance were investigated. Pulse rate and palmar sweating were utilized as indicants of arousal. Anxiety was assessed by means of the State-Trait Anxiety Inventory. The Ithaca College women's varsity gymnastic team ($N=18$) were tested during the 1973-1974 season. The intercorrelation matrix of all variables—gymnastic ability, pulse rate, palmar sweating, state anxiety, trait anxiety, and gymnastic performance—revealed limited relationships between gymnastic performance and arousal/anxiety measures. As expected, gymnastic ability is the best correlate of gymnastic performance.

165. BOROWICZ, Susan K. Behavioral rigidity across sport situations. M.S. in Physical Education, 1976, 80 p. (C. Fisher)

Consistency of behavioral rigidity across sport situations was investigated. Volunteer male junior and senior PE majors ($N=56$) were administered a test and retest of Schaie's Test of Behavioral Rigidity (TBR) and a sports situation scale. The Likert-type sports scale was comprised of 16 different situations that intuitively tested resistance to change. Composite TBR reliability (4 wks) was .77. Reliability coefficients for the 16 sport situations ranged from .75 to .08 with 13 in excess of .50. By using the most discrete sport situations extracted from factor analysis, data were subjected to multiple regression between the situations and behavioral rigidity scores. Since there is more than 1 factor that comprises behavioral rigidity, the TBR sub-tests and sport situations were subjected to canonical correlation. The resulting F ratio and X^2 were not significant ($p > .05$). No consistency of behavioral rigidity across sport situations was revealed. Results lend support to the interactional position which accentuates the importance of considering personal characteristics in light of situational constraints.

166. CHAKAS, Chris J. The effects of videotape feedback on learning motor skills in volleyball. M.S. in Physical Education, 1976, 55 p. (V. Mancini)

42 6th grade students were utilized to compare the effects of videotape replay on volleyball skills. Group I ($N=21$) was taught the traditional style of teaching, and group II ($N=21$) was taught by the traditional style of teaching with the use of videotape replay for 2 45-min periods/wk, for 5 wks. A pre and posttest on the Repeated Volleys Test and the Volleyball Serve Test were administered prior to the 1st, and after the last class meeting to both groups. Results of ANCOVA were not

statistically significant ($p > .05$). The use of videotape replay, in addition to regular classroom instruction, did not affect the performance level of 6th grade students on volleyball skills.

167. CHERTOK, Harry L. A comparison of two methods of teaching ball handling skills to third grade students. M.S. in Physical Education, 1975, 79 p. (V. Mancini)
2 3rd grade classes were used in a 5 wk unit to compare the effects of command and guided discovery styles of teaching on the development of selected ball handling skills. The command group ($N=16$) and the guided discovery style group ($N=16$) each received 2 25-min periods of instruction per wk. Cheffers Adaptation of Flanders Interaction Analysis System (CAFIAS) was used to validate that 2 distinct styles of teaching were being used in the study. The Basketball Dribble Test and the Basketball Underhand Wall Pass Test were used to measure ball handling skill. Data obtained from the pre- and post-skill test battery were converted to weighted-z scores and then subjected to ANCOVA. A nonsignificant F ratio was found ($p > .05$). The guided discovery and command styles of teaching did not differ in their development of selected ball handling skills.

168. DOENGES, Rudolf E. Use of elementary students as modifiers of physical education teacher behavior. M.S. in Physical Education, 1976, 109 p. (V. Mancini)
60 ELE age students, earmarked as being disruptive by their respective PE teachers, from 10 schools were Ss for this study. Ss were randomly assigned to control ($N=30$) and treatment groups ($N=30$). The treatment group met for 75 min/wk for 8 wks of training in specific contingency management skills. The control group received no instruction in the use of specific contingency management skills. 1 wk after the training period had expired, the teacher-student behaviors were analyzed by Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS) from live codings of the 10 PE teachers' classes. MANOVA revealed significant differences ($p < .05$) between the groups on 4 and 8 CAFIAS variables. A discriminant function analysis was then selected to identify the CAFIAS totals of the 4 and 8 variables that contributed to the significant discriminant function. The results illustrated that ELE age students who are described as being disruptive can be trained in specific contingency management skills and can alter the PE teacher's "direct" behavior.

169. DRISCOLL, Robert G. Attribution of attitudes toward physical activity as a function of success. M.S. in Physical Education, 1975, 70 p. (C. Fisher)
Kenyon's Attitude Toward Physical Activity Inventory was

administered to 60 SHS Ss (20 varsity athletes, 20 one-time varsity athletes, and 20 non-athletes) to determine whether or not attribution of attitudes toward physical activity was a function of prior success in physical activity. A 3 X 7 ANOVA revealed that athletes' attitudes differed from those expressed by both non- and one-time athletes on pursuit of vertigo, ascetic, and aesthetic scales. Results also revealed that, when physical activity was perceived as health and fitness, the attitudes of athletes differed from one-time athletes. It was significant to note that the athletes reported higher $\bar{X}$ scores than either one-time athletes and non-athletes on all dimensions. Results hint at the attribution of less positive attitudes toward physical activity by those individuals who never participate in physical activity, and by those whose participation is involuntarily terminated by another's decision.

170. ELLIS, Robert D. The effect of interference upon the reproduction of submaximal grip strength force. M.S. in Physical Education, 1975, 87 p. (H. H. Morris)

Reproduction of a criterion force following an interval during which the S was required to exert an interference force either 10 lbs greater or less than the criterion was examined. A criterion force of 50% of max grip strength was exerted. This was followed by an interval of 40 sec duration during which the S exerted an interference force of 10 lbs greater or less than the criterion. 36 Ss recorded 2 max trials, followed by 10 submax reproduction trials that included the criterion, the interference, and then the attempted reproduction of the criterion. All strength assessment was recorded on a cable-tensiometer with a T-5 orthopedic testing attachment. Constant and variable error scores were analyzed with separate factorial design ANOVAs. Neither the direction nor the placement of the interference force significantly affected the reproduction of the criterion.

171. FAULKNER, Marsha E. A comparison of the teaching behavior of male and female pre-service secondary physical education teachers. M.S. in Physical Education, 1976, 55 p. (V. Mancini)

40 male and 40 female PE majors enrolled in Curriculum and Methods in Secondary PE at Ithaca College were Ss to determine the differences in teaching behavior. Each S was videotaped during 3 micropeer teaching situations. Cheffers Adaptation of Flanders Interaction Analysis System (CAFIAS) was used to code teaching behaviors from these videotapes. A Friedman 2-way ANOVA by ranks revealed no statistically significant difference ($p > .05$) between the teaching behavior of male and female pre-service secondary PE teachers. $\bar{X}$ %s of the 15 variables tested varied little between male and female PE teachers.

172. GENOVESE, Patricia P. Perceptions of women in sport. M.S. in Physical Education, 1975, 105 p. (C. Fisher)
College male and female athletes and non-athletes (N=120) viewed 16 slides of sportswomen selected from a collection of 2,000 slides in Sport Canada's slide library. Ss rated each slide on a scale from 1 to 10 indicating their perception of the female as the "ideal female". A 2 X 2 X 16 ANOVA (sex, athletes, and slides) revealed significant sex and athlete differences. Males viewed hurdling and shot put as less ideal. Non-athletes viewed hurdling, shot put, long jump, field hockey, and running as less ideal. Both males and non-athletes reacted less favorably to sportswomen than did females and athletes. As long as physical attractiveness is deemed a positive attribute for females, anything that detracts from it will be perceived as being less acceptable.

173. HENDRICKSON, Carmon E. The use of the Cheffers Adaptation of Flanders Interaction Analysis System in a pre-service training program of physical education teachers. M.S. in Physical Education, 1975, 76 p. (V. Mancini)
40 pre-service secondary PE majors were divided into 2 groups in order to analyze teaching behavior as a function of instruction and supervision in interaction analysis (IA). Each S taught 3 micro-peer lessons from a predetermined list of sport skills throughout the semester. All lessons were videotaped. Control Ss (N=20) viewed each of their taped lessons and received conventional supervising feedback. Treatment Ss (N=20), in addition to viewing their teaching and receiving conventional supervisory feedback, received instruction in Cheffers Adaptation to Flanders Interaction Analysis System (CAFIAS). Data were collected by live coding of CAFIAS during the 3rd micro-peer lesson. Friedman 2-way ANOVA by ranks was significant ($p < .05$) and X^2 showed differences between groups ($p < .05$) on 7 variables. Analysis of teaching behavior of the CAFIAS group and non-CAFIAS group led to the conclusion that IA enhances the teaching of pre-service PE teachers.

174. HERMAN, David B. The effects of depth jumping on vertical jumping and sprinting speed. M.S. in Physical Education, 1976, 69 p. (H. H. Morris)
The hypothesis of Verhoshanskiy that depth jumping training from specific hts would improve sprinting speed and jumping ability was tested. College age males (N=32) were randomly assigned to 1 of 3 treatment groups or to a control group. Ss in the treatment groups engaged in depth jumping training from a ht of either 2'5½" or 3'7½", or from both hts. Ss trained twice a wk for 5 wks. MANOVA determined if the Ss differed in their ability to sprint 20 yds with a 10 yd running start and to execute a vertical jump. Results indicated that there were

no significant differences among the 4 treatment groups.

175. HORSFALL, J. Stuart. Location of sources of behavioral variance in sport related situations. M.S. in Physical Education, 1975, 104 p. (C. Fisher)

The S-R (situation-response) Sport Inventory of Anxious (S-RSIA) related specifically to basketball was designed and utilized to locate the sources of behavioral variation. Basketball athletes (N=147) from ECAC Division II and III institutions served as S. The S-RSIA employed a sample of 13 situations and 13 modes of response. Situations were selected intuitively to be realistic and to range from innocuous to potentially threatening. Modes of response were selected to represent positive as well as negative excitement or drive. The Likert-type sport inventory allowed Ss to register the felt intensity of their own responses to the situations. A 3-way ANOVA revealed that persons, situations, and modes of response contributed 9.20%, 9.84%, and 5.98%, respectively to the total variance. Combined simple interactions contributed 33.30%. By far the largest single source of behavioral variance (41.58%) was contributed by the residual component. Neither the person nor the situation contributed substantially to the total behavioral variation in sport related situations of anxiety. Since simple interaction variance was greater than main source variance, the results supported the interactional position.

176. INGERSOLL, Margaret T. The motor fitness of primary school boys and girls. M.S. in Physical Education, 1976, 93 p. (H. H. Morris)

A motor fitness battery developed by DiNucci and Shore was used to contrast the performance of ELE boys and girls classified as pre-first grade with those classified as regular 1st grade. 175 Ss were examined on each of 7 variables of motor performance. With the exception of 1 variable, the 300 yd run, Ss classified as regular 1st were superior in their performance to Ss classified as pre-first. Male Ss were significantly superior to female Ss in the 300 yd run and in grip strength.

177. KAPLAN, Ralph. The effects of experimental design upon the ability to perceive and exert varying levels of submaximal force. M.S. in Physical Education, 1976, 54 p. (H. H. Morris)

Effects of variation in exp design and the magnitude of the submax force criterion upon the ability to perceive and exert specific levels of submax force were examined. 72 male and female college students either perceived and recorded 25, 50, or 75% of max grip strength or a balanced arrangement of each of these values. Following the assessment of max strength, Ss attempted to perceive and exert the specified criterion value. MANOVA contrasted the effects of design and % of max strength on constant and variable error scores. The contrast of between- and within-S design effects was not significant. The contrast of % of max strength indicated that the submax levels of 25 and 50% of max elicited constant error scores that were significantly greater than those recorded by Ss attempting to perceive 75% of max strength.

178. KARMO, Henno. Personality comparison of scholastic varsity male sprinters and long distance runners. M.S. in Physical Education, 1974, 67 p. (C. Fisher)
A revised Cattell 16PF was administered to 48 SHS athletes from the Albany-Schenectady-Troy, NY area. Only 6 factors which intuitively seemed to relate to possible differences between sprinters and long distance runners were selected. Multiple discriminant fucntion analysis revealed a significant overall difference. Univariate F tests revealed that sprinters were more assertive and relaxed, whereas long distance runners were found to be more humble and tense. Results did not show sprinters to be extraverted and long distance runners to be introverted as have other studies.

179. KRENZER, Robert C. A comparison of measures of power and the acceleration and velocity phases of the sprint. M.S. in Physical Education, 1974. 50 p. (H. H. Morris)
Leg power, indexed by the Margaria Power Test, the Margaria-Kalamen Power Test, and running speed for the 50 yd dash were assessed. 44 college age males completed 5 trials of each task. Following ANOVA procedures to establish trend-free criterion measures, the measures of power and sprinting speed were correlated. An analysis of the results indicated that the 2 power tests were significantly related but that the correlations between sequential 10 yd segments of the sprint and the power tests were low. The hypothesis of significantly higher correlations between measures of power and the acceleration phases of the sprint as compared with the relationships between the measures of power and top speed segments of the sprint was not supported.

180. LEONARD, Donna J. Attitudes toward physical activity as a function of religious affiliation. M.S. in Physical Education, 1975, 62 p. (C. Fisher)
Simon and Smoll's Children's Attitude Toward Physical Activity Inventory was administered to 300 ELE children in Rockland Co. Yeshiva and public schools. A 2 X 3 X 6 ANOVA (sex, religious affiliation, and scales) revealed significant sex and religious group differences. Females reported more favorable attitudes on HE and fitness, and beauty in human movement scales. Males favored thrill with risk more than females. Attitude differences

were found between Jewish and non-Jewish children on HE and fitness, thrill with risk, beauty in human movement, and release of tension scales. Non-Jewish children attribute more importance to physical activity than do Jewish children.

181. MAC CORMACK, Allan G. The relationship of selected ice hockey skills to success in ice hockey. M.S. in Physical Education, 1975, 57 p. (V. Mancini)

A battery of selected basic skills in ice hockey was administered to 60 members of the St. Lawrence University Hockey School, representing 2 age levels, 11-13 yrs and 14-16 yrs. Data were collected at the end of both the 1st and 2nd wk of the hockey school. Objective ratings of the Ss on the skill tests were then compared to the subjective rating made by 5 qualified coaches as a measure of playing ability. Final multiple correlation coefficients for the 11-13 yr old boys ($R = .71$) and for the 14-16 yr old boys ($R = .74$) were determined. All variables added significantly to the regression equation ($p < .01$). It was concluded that an ice hockey skill test battery including tests of stickhandling, agility, speed, and shooting was found to be a reliable and valid measure of ice hockey playing ability.

182. MINICH, Kathleen J. The effects of contract teaching on skill and knowledge acquisition in badminton. M.S. in Physical Education, 1976. 120 p. (V. Mancini)

60 soph SHS girls were divided into 2 equal groups. The treatment group was instructed in the game of badminton for 4 wks, using the contract approach. The control group received traditional instruction for the same period of time. All Ss were administered a written badminton pretest as well as 2 skills tests, the Miller Wall Volley and the French Short Serve. After 4 wks of instruction, all Ss were posttested on the same 2 skills tests and a different form of the written test. MANCOVA indicated that a significant difference did exist ($p < .05$). Each dependent variable was then subjected to ANCOVA to determine where differences occurred. On the knowledge variable, a significant F ratio of 10.55 ($p < .05$) revealed a group difference. The difference favored the traditionally-taught group. No differences existed between the 2 groups in skill acquisition.

183. MORRIS, Karen J. Urban and rural high school students' perceptions of women in competition. M.S. in Physical Education, 1975. 70 p. (C. Fisher)

SHS male and female urban and rural athletes ($N = 320$) viewed 15 slides of sportswomen selected from a collection of 2,000 slides in Sport Canada's slide library. Ss rated each slide on a scale from 1 to 10 indicating their perception of the female as the "ideal female". A 2 X 2 X 15 ANOVA (locale, sex, and slides) revealed significant locale and sex differences. Female and rural athletes rated the sportswomen as more ideal than did the male and urban athletes. Of the sports depicted, the most acceptable activities were archery, basketball, and running; the least acceptable were the javelin throw, long jump, and shot put. Since the $\overline{X}$ scores for each group were less than 5 (tendency toward more ideal), competitive athletics were accepted as proper roles for females.

184. MUMFORD, Nancy L. *Relationship between psychological arousal and women's gymnastic performance*. M.S. in Physical Education, 1973, 54 p. (C. Fisher)

Psychological arousal was compared to gymnastic performance of the Ithaca College women's gymnastic team (*N*=19) for the 1972-1973 season. 4 events were ranked from predominantly gross to fine by 14 gymnastic coaches and judges. Resting and competitive levels of arousal were assessed by the Palmar Sweat Index (PSI), a technique designed to identify and enumerate active sweat glands. PSI data were collected immediately prior to competition at each of 5 meets. Between and within counter reliability was .99. Transformed T scores for arousal and performance for each event were subjected to correlational analysis. None of the correlations were significant ($p > .05$). Individual differences among the *Ss* revealed that some gymnasts performed best under high arousal conditions whereas others performed best under low arousal conditions. One may not be able to make broad generalizations in terms of the Yerkes-Dodson Law because of these individual differences. *Ss* vary in their precompetitive anxiety largely due to experience and maturation.

185. MUSNICKI, William III. *The effect of ankle taping on ankle mobility prior to and following specific durations of activity*. M.S. in Physical Education, 1975, 61 p. (H. H. Morris)

Dorsi-plantar and inversion-eversion measures of ankle mobility were assessed prior to and following the application of a gibney-closed basketweave with heel-lock tape application to the right ankle. These measures were assessed again after 10 and 20 min of jogging. 20 *Ss*, 10 male and 10 female college students, volunteered to participate. A 2 X 4 factorial arrangement of treatments with repeated measures on 1 factor was used to assess the effects of sex differences and conditions. Application of the tape significantly reduced ankle mobility when contrasted with the ranges of motion of pre-taped conditions. While tape breakdown occurred following the exercise periods, the ranges of ankle mobility were significantly less after exercise than those recorded prior to tape application. The contrast of males to females found no significant differences.

186. PAYNE, Elizabeth B. Attitudes toward physical activity of physical education majors. M.S. in Physical Education, 1974, 72 p. (C. Fisher)

Kenyon's Attitude Toward Physical Activity Inventory was administered to 100 volunteer male and female PE majors from Ithaca College in order to investigate sex differences. A 2 X 6 ANOVA revealed significant differences on all scales except catharsis. Women PE majors are more concerned with pursuing physical activity for HE and fitness reasons than for social reasons. Additionally, they are more interested in activities involving the pursuit of vertigo than in activities pursued for social, cathartic, or aesthetic reasons. Males attribute importance to physical activity as an aesthetic experience, although this has traditionally been considered a female domain. Results hint at some dissonance between physical activity stereotype and actual attitudes.

187. PETERS, Susann M. A proposed contract elective physical education program for senior girls in Bloomsburg High School. M.S. in Physical Education, 1976, 144 p. (V. Mancini)

18 contracts were developed to be utilized by SHS girls in an elective PE program in Bloomsburg, PA. Changes in both the PA Dept. of Ed. regulations and the Bloomsburg Area School Dist. policies made it feasible to include activities which were not previously taught. The following factors were considered in determining the activities to be included: surveying school personnel, school facilities, community rec facilities, establishing course activities, establishing guidelines for electing activities, determining guidelines for drawing up contracts, and securing school board approval. Each contract defined the grading system, stated the participating and skill requirements, designated written test material, suggested optional independent projects, and listed reference materials.

188. ROCHESTER, Diane A. The effects of supervision and instruction in use of interaction analysis on teaching behavior and effectiveness of pre-service teachers. M.S. in Physical Education, 1976, 133 p. (V. Mancini)

College PE jrs (N=36) were instructed in the use of Cheffers Adaptation of Flanders Interaction Analysis System (CAFIAS) and randomly selected and assigned to treatment (N=18) and control (N=18) groups. Each S taught micro-peer lessons that were videotaped for feedback and evaluation of teacher effectiveness. Prior to the final teaching assignment, treatment Ss were also instructed in the coding process and, under supervision, used CAFIAS to code videotaped lessons. Data for final analysis of teacher behavior and teacher effectiveness were collected from the last lesson taught by each S. Teacher behavior was identified through the use of CAFIAS and teacher effectiveness was assessed through use of the Teacher Performance Criteria Questionnaire (TPCQ). A significant difference ($p < .05$) in teacher behaviors between groups was determined through MANOVA and a stepwise discriminant function analysis was used to identify which CAFIAS variables contributed significantly to between-groups differences. After viewing the videotapes of each S, data from 5 judges' responses on the TPCQ were subjected to a canonical analysis to determine significant correlations between TPCQ teacher-effectiveness and CAFIAS teacher-behavior variables. Two significant correlations ($p < .05$) were found. The following conclusions were drawn: the combined use of instruction in the knowledge and practical application of coding IA and reviewing videotapes was found to be beneficial to the supervision and teacher preparation of pre-service teachers; and teaching behaviors of pre-service teachers, as identified through use of IA, are related to performance on teacher-effectiveness variables.

189. RUBSAMEN, Richard G. Augmentation-reduction of submaximal force responses by athletes and non-athletes. M.S. in Physical Education, 1975, 75 p. (H. H. Morris)

The hypothesis that athletes who engage in contact sports would reduce the perception of submax force to a greater extent than athletes who participate in non-contact sports and non-athletes was examined. 60 Ss, 20 from each subgroup, were chosen. Ss recorded what they perceived to be 75% of their max grip strength on 5 trials for each of 3 consecutive days. The 5 trials were followed by 2 max grip strength exertions. Using 75% of the $\overline{X}$ of the max trials as a S's individual criterion, constant error (CE) and variable error (VE) scores were recorded. While athletes in both classifications were significantly stronger in recorded max grip strength than non-athletes, no significant VEs were found. Therefore, the assumption that differences in submax force perception might be a function of specific athletic experience was not supported.

190. STAUB, Sara M. Attitudes of senior high school students toward physical activity who participated in traditional as opposed to lifetime sports physical education programs. M.S. in Physical Education, 1975, 208 p. (W. Straub)

Attitudes of students toward physical activity were compared in traditional and lifetime sports oriented programs. Ss were 173 boys and 167 girls enrolled in 3 different SHS. Attitudes toward physical activity were assessed by the Kenyon Attitude Toward Physical Activity (ATPA) Inventory, Form D. Test-retest reliability for the 6 domains ranged from .98 to .99. Males and females, in general, expressed positive attitudes toward physical activity in both traditional and lifetime sport oriented schools. Multiple discriminant function analysis produced significant differences ($p < .05$) in attitudes toward physical activity among males and females from the 3 schools. Females who participated in the traditional program were more positive in their attitudes than those who participated in the lifetime sports program. Males from the lifetime sports program possessed more positive attitudes than those from the traditional program. Different attitudes were not found among students from low, medium, and high socioeconomic levels. Male athletes did not differ in their attitudes from male nonathletes; however this finding was not true for females. Both types of programs were capable of producing positive attitudes toward physical activity.

191. STRAUB, Lucille A. A comparison of foot-eye coordination of boys and girls 7, 9, and 11 years of age on a tracking task. M.S. in Physical Education, 1976, 65 p. (H. H. Morris)

Foot-eye coordination of 7, 9, and 11 yr old boys and girls was assessed on a ski simulator tracing task. 42 ELE boys and girls, 7 from each age-sex classification, were randomly chosen as Ss. Each S was tested for 10 trials a day for 2 consecutive days. A trial consisted of manipulation of a miniature skier through a series of 80 gates that were located on a motor driven belt. S's score was the total no. of gates missed. A factorial arrangement of treatments with repeated measures on 1 factor contrasted variables of age, sex, and trials. Foot-eye coordination was found to differ significantly between the 7 and 11 yr olds. The difference between males and females was not significant, nor was the sex by age interaction.

192. VOGEL, Richard D. The effects of instruction and supervision in Cheffers Adaptation of Flanders Interaction Analysis System on the teaching behavior of student teachers. M.S. in Physical Education, 1976, 74 p. (V. Mancini)

40 PE student teachers were randomly assigned to treatment (N=20) and control (N=20) groups to analyze their teaching behavior. Prior to the beginning of the student teaching assignments, the exp Ss received instructions in the understanding and use of Cheffers Adaptation of Flanders Interaction Analysis System (CAFIAS); the control group received no instruction in CAFIAS. All Ss were videotaped on a random basis during 2 50-min lessons, with data for the final analysis collected from the 2nd taping. CAFIAS was used to analyze the teaching behavior of the student teachers. MANOVA determined the significance between groups, and stepwise discriminant function analysis determined the contribution of the CAFIAS variables toward the

between-groups differences. A significant group difference (p <.05) was revealed. It was concluded that the understanding and use of IA was beneficial in the instruction and supervision of student teachers.

193. WHIELDON, Thomas J. The influence of kinesthetic aftereffects upon the perception on submaximal grip strength. M.S. in Physical Education, 1974, 71 p. (H. H. Morris) Kinesthetic aftereffects were hypothesized to influence the perception and recording of submax exertions following all-out max grip strength assessment. This effect was contrasted at 3 levels, namely 25, 50, 75% of max grip strength. Max grip strength and perceived submax exertions were recorded using a cable-tensiometer and T-5 orthopedic testing attachment. A 2 X 3 factorial design contrasted the variables of testing procedures and levels of exertion. Constant and variable errors were analyzed as the dependent variables. Neither testing sequence nor the submaximal level assessed significantly affected the consistency of submax exertions. The level of strength, however, rather than the testing sequence, significantly affected the accuracy of submax exertions.

KANSAS STATE UNIVERSITY (C. B. Corbin)
MANHATTAN, KANSAS

194. BOONE, Jeff. A survey of the recreational interests and habits among students at Kansas State University. M.S. in HPER, 1976, 96 p. (D. Lindley)

195. CARLSON, John. The effects of an extended carbohydrate restricted diet on continued treadmill running performance. M.S. in HPER, 1976, 64 p. (W. Zuti)

196. HEIDER, Ann. Social facilitation and goal setting as motivational factors effecting running performance. M.S. in HPER, 1976, 87 p. (C. B. Corbin)

197. PEARSON, Pamela S. The effects of selected variables upon the efficiency of the sprint start. M.S. in HPER, 1976, 88 p. (Jan Merriman)

198. YENZER, Beverly. A comparison of hydrostatic weighing with other methods of determining body fat. M.S. in HPER, 1976, 96 p. (W. Zuti)

KENT STATE UNIVERSITY (R. Bos)
KENT, OHIO

199. COUZELIS, Paul M. *Circadian variations in responses of trained and untrained men to submaximal exercise.* Ph.D. in Physical Education, 1976, 212 p. (L. Golding)

Circadian variations of the cardiorespiratory system were studied during 11 min bouts of submax (50% max VO_2) bicycle ergometer exercise performed every 3 hrs for 24 hrs by 8 matched groups of 3 Ss. Blood pressure, pulse pressure, tidal volume, blood lactate, serum potassium, and perceived exertion demonstrated significant ($p < .05$) circadian rhythms when analyzed by the cosinor procedure. ANOVA revealed time dependent differences during exercise in VO_2, R, pulse pressure, and blood lactate. No evidence was found that daily exercise at noon exerts a meaningful exogenous influence on the timing of circadian rhythms. Results indicate that in studies where cardiorespiratory parameters are measured during exercise, attention must be paid to the circadian phase during which the Ss are measured.

200. GIBSON, Richard L. *Avery Brundage: Professional amateur.* Ph.D. in Physical Education, 1976, 221 p. (B. L. Seidel)

The role that Avery Brundage and his philosophy of amateurism played in amateur sport was examined. Historical events and philosophical concepts relative to Brundage are analyzed for consistency, factuality and realism. Olympism was synonymous with the "pure" amateur spirit and was the basis of Brundage's philosophy of amateurism. His philosophy exhibited many erroneous conceptions. He applied to the administration of modern sport his outdated concept of amateurism, based on ancient Greece's "athletic ideal" and on the "gentleman amateur" concept of 19th century England. Amateur athletes were therefore governed by a leader who refused to acknowledge change and who attempted to impose his values on them, creating divisiveness and conflict in the realm of sport.

201. MC SWEGIN, Patricia J. *Heart rate and oxygen uptake responses to treadmill running, free swimming, and tethered swimming in adult males.* Ph.D. in Physical Education, 1976, 150 p. (L. Golding)

Comparison of HR and O_2 uptake regression lines for submax responses did not reveal a significant difference among any of the 3 exercise conditions. Max HR and max O_2 uptake data were also compared. Running HR and O_2 uptake maxs were observed to be significantly higher than the max values for either of the swimming conditions. These differences indicate that adult males who are not highly trained swimmers are not able to elicit, through swimming, max HR and O_2 uptake values of the same magnitude as they can elicit through treadmill running. No significant difference was found for max HR or max O_2 uptake between free and tethered swimming. It appears, therefore, that the less expensive, more readily available tethered swim testing technique has validity for use in evaluating HR and O_2 uptake responses to free swimming.

202. MORGENSTERN, Kirk L. Effect of including ten minutes of jogging in a physical education curriculum on the physical fitness of fifth graders. M.A. in Physical Education, 1977, 119 p. (L. Golding)

The Ss were given the Kasch Step Test prior to the study and randomly assigned to 1 of 4 groups. The 2 control groups participated in the regular PE program 2 or 3 days/wk. The 2 exp groups also had PE 2 or 3 times/wk; however, the amount of time devoted to the regular program of these groups was decreased and 10 min of jogging was added. The Kasch Step Test was also administered at the end of the 11 wk study. The results indicated that the $\overline{X}$ post-training score of the exp groups did not significantly differ from that of the control groups. However, the $\overline{X}$ post-training score of all 4 groups combined was 4.82 bpm lower than the $\overline{X}$ pre-training score of all groups. Results also indicate that the no. of PE classes/wk, S ht, S wt, and sitting ht did not significantly affect step test scores. It was concluded that there was no reason for adding 10 min of direct aerobic activities to the regular PE program to improve cardiorespiratory fitness.

203. PUFFER, Terrell K. The development of a physical fitness test battery for adult women. M.S. in Physical Education, 1976, 145 p. (L. Golding)

Physical fitness tests and their protocols were developed from the literature and submitted to a jury of experts for consideration. Tests chosen to represent the physical fitness components of interest to the YMCA were the bicycle ergometer test, 3 min step test, a body composition test to predict % fat, trunk flexion, a 2 arm curl test, and bench press test. Physical directors who had previous experience testing women were contacted and asked to share their test results with the researcher. 13 physical directors responded by reporting more than 6,000 test scores for 905 adult women. Standard score tables were developed for each test and a guide to setting workloads for the bicycle ergometer test was developed for adult women. The test battery is suitable and appropriate for testing large groups of adult women.

204. SHOPE, Gay Nell E. *Relationship between striking skills and various perceptual components in five-year-old children*. M.A. in Physical Education, 1976, 136 p. (K. L. DeOreo)

This study observed and quantified the performances of prekindergarten children on stationary striking and moving striking tasks, and determined if striking ability can be predicted from a S's score on selected visual and timing components, as well as various sidedness and demographic variables. The stationary striking task consisted of using a whiffle bat to hit a ball off a batting tee. For the moving striking task, the ball was pitched so that it bounced once before the pivot point (home plate) and traveled up over the pivot point at the ht of the S's umbilicus. All variables were correlated and a stepwise multiple regression analysis was used to predict striking ability. Results indicated that children who hit the ball with greater velocity on the stationary striking task also hit the ball with greater velocity on the moving striking task. Based on the derived regression equation, variables were identified as predictors of stationary and moving striking ability.

205. TOWN, Glenn P. *The development of a simple submaximal treadmill test to predict maximum aerobic capacity*. M.A. in Physical Education, 1976, 75 p. (L. Golding)

A treadmill test was developed based on the linear relationship between HR and work. 20 adult males who exercised regularly in a running or a swimming fitness program were used as Ss. 3 treadmill workloads (3 mph for 3 min) progressed from 1% to a final elevation from 12% to 21%. The final workload was designed to elicit a HR response of 150 bpm. After recovering from the submax treadmill test, Ss were taken to voluntary max exertion while HRs and VO_2 measurements were taken each min. A stepwise multiple regression equation was used to determine the best predictors of max aerobic capacity. The equation was: VO_2 max = 57.7183 - .6793 (age) + 2.328 (load 3-% grade) - .2527 (load 3 HR) + .2651 (resting HR). A multiple correlation, R = .7726, ($R^2 = .5969$) and a SE of the prediction ± 4.5824 (ml/kg) were obtained from the 20 Ss by use of the multiple regression equation.

LAMAR UNIVERSITY (M. J. Haskins)
BEAUMONT, TEXAS

206. GREENOCKLE, Karen M. *Development of a success prediction test battery for women's gymnastics*. M.S. in Health and Physical Education, 1974, 60 p. (M. J. Haskins)

22 students, enrolled in a PE professional's gymnastics course at LU, participated in supplying the data for the study. The test battery of 17 physical fitness tests was administered to

all S at the beginning of the semester. After 8 wks of instruction, Ss were rated on 10 different skill combinations and the Wherry-Doolittle Test Selection Method was applied to develop the test battery. The final test battery provided a multiple correlation of $r=.79$ with the ratings. The weighted battery scores were then converted to equivalent ratings and recommendations for screening were evolved.

207. MANN, Shella A. The role of sport, games and play in the development of society: A simulation game. M.S. in Health and Physical Education, 1976, 102 p. (M. Haskins)
The investigation was initiated to design an instrument which could be used both as a teaching tool and as a basic research tool. The developmental, environmental and behavioral aspects of interpersonal relationships were incorporated into a simulation game which would allow the examination of the role of play and physical activity in the development of and the occurrence of interactions of different types of societies. The concepts of subsistence, leisure, and satisfaction were the constructs upon which this game was based. Ss in the study were female college PE majors and minors enrolled in a course on history and philosophy of PE. The material used in the educational phase of this simulation game was material from the text used in the course. Results indicated that the purpose of the design was achieved. The Ss became very involved, learning about interpersonal relationships, as they participated in the game. Ss also increased their work output during the game. Through control of different variables in the design, a conditioning contingency was set up to reinforce the Ss' efforts to control their situations. The effectiveness of the manipulation was demonstrated by the results of the "simulation game."

208. TORRANCE, Susan S. Effects of the contract system of teaching on a collegiate women's beginning tennis class. M.S. in Health and Physical Education, 1976, 120 p. (A. Bell)
The positive and negative effects of the contract system of teaching as compared to more traditional forms of education were determined. 47 female students enrolled in 2 different women's PE beginning tennis classes at Lamar University in the spring semester of 1975 participated. Premeasure evaluations for all students in both written knowledge and skills were determined during the 1st wk of instruction. 13 variables for both classes were compared statistically with a simple ANOVA. There were no significant differences between the scores of the 2 classes except on the written knowledge premeasure test ($p < .05$), the written knowledge surprise test ($p < .01$), and the mid-term written knowledge examination ($p < .10$). On all 3 of those tests, the non-contract class scored significantly higher.

The Pearson product-moment correlation coefficient between 2 variables revealed premeasure and posttest positive correlations ($p < .01$). 2 of the 3 variables subjected to improvement analysis differed significantly. The combined written knowledge improvement scores ($p < .05$), and the combined forehand/backhand/skills I and II scores differed significantly ($p < .05$) in favor of the exp or contract class.

LOUISIANA STATE UNIVERSITY (Jack K. Nelson)
BATON ROUGE, LOUISIANA

209. COLE, Edwin E. *An instructional film unit in mechanical principles for the classroom teacher at the sixth grade level*. M.S. in Physical Education, 1976, 82 p. (F. A. Drury)

A unit in mechanical principles which integrated PE, science, arithmetic, spelling and vocabulary was developed to be used by a regular classroom teacher. Utilizing simple, readily available materials in exp, the conceptual approach to teaching and learning was employed to enable students to observe the demonstration and discuss the concepts in their own words before being given the principles on which the demonstrations were based. The unit included a Super 8mm film of the exp which were used to demonstrate each principle and an accompanying narrative sound trace on cassette tape. The Ss used in the filming were 26 students in a 6th grade class at the LSU Laboratory School. Ss participated in 14 exp units covering 17 mechanical principles. They were then examined individually by students in an undergraduate kinesiology class to assess their understanding of the material. A majority of the Ss completed the examination without a mistake and no S missed more than 3 out of the possible 75 questions.

210. HARANG, Linda S. *Effects of interim bulletin 741 on the physical education programs and teachers of Louisiana public high schools*. M.S. in Physical Education, 1976, 94 p. (L. M. Lipe)

Questionnaires were mailed to all 371 public HSs in LA concerning the impact of Bulletin 741 which essentially reduced the PE requirements from 4 to 2 yrs. Replies were received from 210 schools (57%). The data were categorized into 10 groups according to student enrollment and sex. Among the findings were that in 2 yrs since the Bulletin's implementation, there has been a decrease in PE enrollment. There has also been a decrease in the average size of the PE classes. Only slight differences in effects were noted in the boys' and girls' programs. More changes were noted in the HSs with enrollments above 500. Over 50% of the comments from PE teachers indicated support for the change from a 4 yr to a 2 yr requirement.

211. HARVEY, James R. Perceived exertion in aerobic and anaerobic performance of black and white college males. Ph.D. in Physical Education, 1976, 102 p. (J. Nelson)

Ratings of perceived exertion (RPE) of 20 black Ss were compared with 20 white Ss under endurance conditions and in short explosive exercise performance. All Ss were tested on a bicycle ergometer at workloads of 300, 600, 900, 1200 and 1500 kpm/min. The Ss were also tested while pedalling at 150 rpm at a workload of 900 Kpm/min, with RPE recorded at PRs of 140, 150, 160 and 170. As a sub-purpose of the study, the 2 groups of Ss were compared on predicted VO_2 by the Astrand Rhyming Test and on the Margaria-Kalamen Test of Anaerobic power. ANOVA for repeated measures failed to reveal any differences in the perception of effort between black and white college Ss in either the prolonged exercise or the short explosive performance. The black Ss were found to have significantly higher ($p < .05$) anaerobic capacity scores. No differences in predicted VO_2 were found between the 2 groups.

212. MAY, Robert E., Jr. Medial and low frequency range cyclic rhythms in selected motor tasks. Ed.D. in Physical Education, 1976, 94 p. (J. Nelson)

College males ($N=14$) and females ($N=12$) were tested on hand grip strength and hand response time 3 days/wk for 14 wks. The data were analyzed by ANOVA with least squares curve fitting encompassing linear regression and harmonic analysis. No singular biological rhythm characterized either male or female motor performances. Improvement in performance occurred in both tasks over the 14 wk period. The majority of both the male and female cycles in response time fell within 20 to 30 days. Male cycles in strength appeared to be of shorter length than female cycles. Medial frequency range rhythms (½ hr to 6 days) were not evidenced in either performance task.

213. WELCH, Mary F. Effects of physical training upon collagen and elastin fibers of the aorta of adult male white rats, 75 days and 130 days old. Ed.D. in Physical Education, 1976, 98 p. (J. Wells)

Adult male albino rats ($N=180$) were exercised under the following conditions: 15 min vs 30 min daily swimming; 10 days vs 20 days duration; and young adults vs older adults. Nonswimming rats in each age group served as controls. At the end of 10 days, half of the rats were sacrificed by ether and the entire arch of the aortae were prepared for examination by light microscopy. The remaining rats were sacrificed after 20 days. Factorial ANOVA with orthogonal comparisons were used in the analysis of data. It was found that exercise significantly increased the no. of elastin fibers in the media of the aorta. There were no differences with regard to the no. of min of daily exercise or duration of the program. Exercise is apparently more beneficial in increasing the no. of elastin fibers in younger than older Ss. No changes in the size or no. of collagen fibers were evidenced in the study.

MANKATO STATE UNIVERSITY (R. B. Moore)
MANKATO, MINNESOTA

214. CANEFF, Marcia J. A comparison of personality traits of secondary female athletes and nonathletes. M.A. in Physical Education, 1975, 46 p. (J. H. Llewellyn)

215. HEDLUND, Bruce B. The effect of ankle flexion and ankle extension on reaction time, movement time, and total response time in the execution of the stand-up in wrestling. M.A. in Physical Education, 1976, 70 p. (J. H. Llewellyn)

216. HILMER, Robert W. The relative effects of selected stress conditions on free throw shooting performance. M.A. in Physical Education, 1976, 87 p. (J. H. Llewellyn)

217. Kittilson, Daniel K. An assessment of physical education opportunities for kindergarten age children in Minnesota. M.A. in Physical Education, 1976, 89 p. (J. H. Llewellyn)

218. MEETH, Timothy R. Effects of different grips for the serve among beginning tennis players. M.A. in Physical Education, 1975, 38 p. (R. D. Gorman)

219. NOFI, Raymond. The effects of competition on the performance of a gross motor skill by two age levels of educable mentally retarded students matched to normals by chronological age and sex. M.A. in Physical Education, 1976, 68 p. (J. H. Llewellyn)

220. REINHOLTZ, Gary D. The retention of a novel motor skill by first and second grade students after one week and one month of no practice. M.A. in Physical Education, 1976, 56 p. (J. H. Llewellyn)

221. SNELLING, Raymond. A physical education supplement to physical therapy for elementary students with cerebral palsy. M.A. in Physical Education, 1976, 55 p. (M. Buck)

MC GILL UNIVERSITY (D. Q. Marisi)
MONTREAL, QUEBEC, CANADA

222. ANSHEL, Mark H. The effect of music and rhythm on the ability to endure a physical task. M.A. in Physical Education, 1976, 69 p. (D. Marisi)

A sample of 32 university PE students (16 males and 16 females), between the ages of 19 and 22, were tested for endurance performance under 3 environmental conditions on the bicycle ergometer. Endurance was defined as the accumulated time (.01 sec) that Ss could maintain a rate of 50 pedal revolutions (100 beats) per min. The test was terminated when a S was unable to maintain a minimum pace of 18 km/10 consecutive sec. S were assigned, in counterbalanced order, into each of 3 exp conditions; the rhythmical movement to music condition, in which Ss performed in synchronization to the music stimulus; a background music condition in which Ss performed asynchronously to music but followed the pace of a flickering light stimulus; and a no music condition in which only a flickering light prevailed. Prior to exposure to the endurance tasks within the exp conditions, all Ss were given a pretest in order to determine workloads, relative to a HR of 170 bpm. The data, analyzed by a sex X conditions repeated measures design, revealed statistically reliable differences among conditions ($p < .01$) as well as for time of male Ss contrasted with female Ss ($p < .01$). The exp conditions, however, did not differentially influence the endurance time scores for the 2 groups of Ss ($p > .05$). Specifically, *post hoc* analyses indicated that performance was significantly longer when Ss worked in synchronization to the music stimulus as opposed to the other conditions. No significant differences were noted between the asynchronous movement to music and no music conditions. A t test for independent $\bar{X}$s showed that the male Ss had significantly greater scores ($p < .001$) for PWC than the female Ss. When individual work capacity was divided by the respective body wt (kg), however, the differences between male and female Ss were negligible ($p > .05$).

MIDDLE TENNESSEE STATE UNIVERSITY (G. Penny)
MURFREESBORO, TENNESSEE

223. ADAMS, Ozane R. *A study of competencies for health, physical education, and recreation majors with implications for articulation between community colleges and state universities in Tennessee.* Doctor of Arts in Physical Education, 1976, 113 p. (Martha Whaley)

Articulation problems and competencies which HE, PE, and REC majors should acquire at the community college level were investigated. An instrument developed at Washington State University was mailed to 9 state universities and 10 community colleges. PE professors at each institution identified desired level of attainment for 72 competency statements and placed in rank order to 9 suggested guideline statements. Rank order and $\bar{X}$ scores were computed for each group and combined group. Competencies revealed were: role of interscholastic athletics in PE, demonstrate adequate level of personal fitness, knowledge of equipment and supplies, knowledge of public relations, and employ medically sound exercises in PE program. Guideline rankings indicated statewide meetings should be held for registrars and PE chairpersons to establish better communications.

224. FLYTHE, Claud. A study of the professional preparation of black, male head coaches of Virginia high school league. Doctor of Arts in Physical Education, 1976, 80 p. (G. Penny)

47 black, male head coaches in the VA HS league were surveyed to assess their professional preparation to determine if their professional preparation from 4 predominantly black institutions in VA adequately prepared them for their present job responsibilities. Results revealed that a large % of the coaches were not adequately prepared. The areas of inadequate preparation were: organization and administration, physiological aspects of training, and care and prevention of athletic injuries.

225. GARDNER, Paul. The status of physical education programs in the public and private two-year colleges of North Carolina with general education and transfer programs. Doctor of Arts in Physical Education, 1976, 115 p. (G. Reeder)

PE programs in public and private 2 yr colleges in NC were investigated in relation to general education requirements and transfer programs. Chairpersons from 22 2-yr colleges responded to the questionnaire. Their responses revealed: a majority of the 2 yr colleges required at least 1 yr of PE activities, public community colleges offered more innovative types of activities than private 2 yr colleges, letter grades were utilized in the majority of the colleges and articulation from the 2 yr college to 4 yr institutions was not a major problem.

226. HUNT, Delores M. A study of administrative duties and their importance by those who administer intercollegiate athletic programs for women in Tennessee. Doctor of Arts in Physical Education, 1976, 89 p. (R. Ballou)

44 directors of women's intercollegiate athletic programs in TN responded to a questionnaire that investigated administrative duties and the importance of these tasks to women's athletic programs in TN. The results were presented in $\overline{X}$'s and %'s of responses to 50 administrative statements. The responses revealed that the majority of women's athletic program administrative duties are performed by women, most administrators had teaching responsibilities, and general faculty duties were included. The majority of administrators felt it was essential that they have input in formulating policies and procedures of women's athletic programs.

227. MC DONALD, Sylvia. A correlation study of personality factors and learning selected motor skills in traditional and programmed instruction methods. Doctor of Arts in Physical Education, 1976, 146 p. (F. Riel)

63 male and female Ss enrolled in 4 beginning tennis classes were randomly assigned to a programmed or a traditional method of teaching to investigate if a relationship exists between selected personality factors and skill acquisition and teaching methodology. The study was conducted for 9 50-min periods for 4½ wks. Skill acquisition was determined by pre-posttest using Broer-Miller forehand-backhand drive test and Hewitt tennis achievement test-speed of service. Cattell's 16 PF was utilized to determine relationship of personality factors and skill acquisition. Utilizing the .05 level of significance, the study revealed significant rs between personality factors: F (sober) M + (imagination) and I (tough-minded) and traditional methodology of service skill. No significant rs were realized for programmed methodology in tennis skills and personality factors.

228. SHARP, Roy. An investigation of professional periodical reading habits of physical educators in selected Tennesee colleges and universities. Doctor of Arts in Physical Education, 1976, 98 p. (P. Harrison)

The professional reading habits of selected physical educators in colleges and universities of TN were investigated. Periodicals read, subscriptions to journals, membership in professional organizations, and conference attendance, among other factors, were studied. The results of the survey revealed: physical educators studied do not read selected periodicals regularly, regular readers of a particular periodical was related to the subcribers of that periodical, and age, yrs of teaching experience, degree earned and conference attendance were related to reading habits and journal subscriptions.

229. WHALEY, Gary. A study of the effects of educational bill 1445 in relation to senior citizens and its implication for education, physical education and recreation in selected state supported colleges and universities in Tennessee. Doctor of Arts in Physical Education, 1976, 99 p. (S. Hall)

193 male and female senior citizens from 7 senior citizen centers, located in the vicinity of 7 state supported colleges and universities were surveyed to determine the effects of education bill 1445 on general education and PE programs. The survey revealed a total of 82 senior citizens enrolled in 124 courses at the 7 selected institutions. 59% of those surveyed indicated no knowledge of the bill. Overall responses indicated interest in physical conditioning, social dance, swimming,

bowling, camping, and outdoor recreational activities.

230. WILLIAMS, Linda A. The measurement of health knowledge of selected freshmen students at Virignia State College. Doctor of Arts in Physical Education, 1976, 67 p. (G. Penny)

Bush's Health Analogies test was administered to 200 males and 290 females enrolled in a basic HE course to evaluate the HE knowledge of freshmen students. The results served to plan HE course content at VSC. HE content areas measured were: diseases, family living, personal hygiene, community HE, mental HE, tobacco and drugs, and nutrition. ANOVA and Duncan Multiple Range were used to depict significant differences between males and females and the 7 HE categories. Nutrition scored highest in knowledge for both male and female. HE knowledge was weakest in personal hygiene, family living and diseases. ANOVA revealed no significant differences in HE knowledge in the 7 categories between the male and female freshmen students.

231. WOODRING, Willard C. Identifying important teacher activities for the purpose of their inclusion in a professional physical education curriculum. Doctor of Arts in Physical Education, 1976, 219 p. (A. H. Solomon)

A questionnaire developed by W. C. Lewis was modified by the author and mailed to SE FL HS PE teachers in the FL Atlantic University service area. Objectives were to identify important teacher activities that might be incorporated into professional preparation courses. 188 PE teachers (95 women, 93 men) participated in the study. The 10 divisions of the questionnaire were: curriculum planning, organization and grouping for instruction, instructional and/or motivational techniques, social and emotional development, physical development and HE, safety, first aid, and legal aspects, evaluation, record keeping, facilities and equipment and community involvement and professionalism. The results revealed that control and motivation of students, safety and legal aspects of teaching PE and provision for first aid were seen as the most important items by the participants.

MONTANA STATE UNIVERSITY (E. Kreighbaum)
BOZEMAN, MONTANA

232. BOUMA, Sherwood. The comparative analysis of the modified standing start and the medium crouch start as they relate to sprint speed. M.S. in Physical Education, 1976, 44 p. (N. Humphrey)

Differences in sprint speed resulting from use of the medium crouch start as compared to the modified standing start were examined. 10 non-sprinters were selected from the 1975-76 MSU men's track team. 3 times were utilized for the comparisons of the 2 types of starts: block clearance, 30 yds, and 60 yds. Block clearance was defined as the amount of time it took each *S* to react to the firing of the starting gun and to break contact with the blocks. 4 testing sessions were conducted using each of the 2 types of starts. The 1st and 2nd testing sessions were conducted to collect data on the medium crouched start, the 3rd and 4th to collect data on the modified standing start. During each testing session, each *S* ran a total of 3 60 yd dashes. Results were analyzed using $\bar{X}$ times, *F* tests, and *t* tests to determine if any significant differences existed. The findings in regard to the 2 types of starts were: $\bar{X}$ block clearance time was slower by .12 sec using the modified standing start. The $\bar{X}$ time for the medium crouched start was .73 sec, and the $\bar{X}$ time for the modified standing start was .85 sec. This difference in times indicated a significant difference at this distance. $\bar{X}$ times for 30 yds indicated no significant differences between the medium crouched start or the modified standing start. $\bar{X}$ 30 yd time for the medium crouched start was 4.46 sec, and the $\bar{X}$ 30 yd time for the modified standing start was 4.45 sec. $\bar{X}$ times for 60 yds indicated no significant difference between the medium crouched start or the modified standing start. $\bar{X}$ 60 yd time for the medium crouched start was 7.74 sec, and the $\bar{X}$ time for the modified standing start was 7.69 sec.

233. LILLETVEDT, Janice M. Descriptive analysis of selected alignment factors of the lower extremity in relation to lower extremity trauma in athletic training. M.S. in Physical Education, 1976, 80 p. (E. Kreighbaum)

The relationship between lower extremity alignments and the shin splint syndrome in female athletes was examined. Selected measures describing the alignment of the lower extremities of 32 women athletes were taken. Data recorded were classified into: Group 1—a no shin splint (SS) group; Group 2—a current moderate SS group; Group 3—a current severe SS group; Group 4—a previous SS group; and Group 5—a current SS group. Data were analyzed through the use of ANOVA, Duncan's test, and a step-wise regression. ANOVA revealed significant alignment differences ($p < .05$) between *Ss* who had no SS, *Ss* who had SS previously, and *Ss* who currently had SS. The Duncan's test indicated that 15 measures varied significantly ($p < .05$) between the no SS group and the current SS group and between the no SS group and the previous SS group. 11 of the 15 measures varied significantly between the previous SS group and the current SS group. The step-wise regression indicated that 6 of the 15 measures taken could be used to predict the occurrence of the SS syndrome. The 6 predictive factors included: the degree of external rotation of the femur with the hip extended, the degree of dorsiflexion of the ankle with the knee both flexed and extended, the degree of inversion at the subtalar joint, the frontal plane position of the tibia/subtalar joint static, and the position of the calcaneus in relationship to the floor/subtalar joint static.

NEW YORK UNIVERSITY (R. A. Weiss)
NEW YORK, NEW YORK

234. ARNOLD, Lloyd C. Development of a conceptual content for the in-service training for YMCA physical directors. Ed.D., 1975, 143 p. (R. A. Weiss)

Examination was made of the relationships between the YMCA Physical Director's duties and responsibilities, his on-the-job training, the problems and elements of these problems which he encountered during the 1st 5 yrs on the job and then to formulate recommendations for the content of in-service training to improve his qualification for his work. A questionnaire was used to gather data from 139 Ss. The information collected was used to develop statments of content areas and sub-content areas which the YMCA physical directors were unprepared to handle. Conceptual statements within the content and sub-content were developed by using the literature as a source of statements which were analyzed, synthesized and verified to demonstrate that the subject area had been completely covered. The concepts under 4 general content areas are: working with volunteers and staff; communication skills; management skills; and program development. These concepts make it possible to develop an appropriate YMCA in-service training program.

235. BOZICK, Brian J. An investigation into the effect of post-hypnotic suggestion on the performance of a selected motor skill by males under stress conditions which produce anxiety. Ph.D., 1976, 100 p. (R. C. Brown, Jr.)

The effects of post-hypnotic suggestion on performance of a motor skill by males under stress conditions was examined. 100 Ss were tested for hypnotizability and then placed in high or low susceptibility groups. These groups were then randomly divided equally into exp and control groups. All were practiced in stabilometer balancing for a total of 90 sec and then tested on balancing performance for 3 30-sec trials. Control Ss read an unrelated text for 10 min and were retested for 3 30-sec trials while being shocked on the right index finger. Exp Ss were hypnotized and instructed to experience arm, hand, and finger analgesia post-hypnotically. This group was then retested under shock conditions. A comparison of X performance, posttest scores, using the ANCOVA technique indicated no significant difference at the .05 level.

236. CHU, Ebenezer J. The nature and scope of international amateur sports participation by selected countries and the implications for international relations. Ph.D., 1976. (S. F. Pechar)

Questionnaires were sent to official agencies of 12 countries to determine the extent to which international sports participation has implications for international relations. Information was obtained that characterized these countries in: international amateur sports participation, financial support, official involvement, rewards, and international relations. As a cross check, other sources of information were consulted. The findings showed that the level of a country's development affected its international amateur sports participation; that the govenrment of each country gave some financial assistance to amateur sports and also demonstrated official involvement in international amateur sports matters; and that amateur sports have been used by various governments to implement their political, ideological as well as racial desires.

237. LEIBOWITZ, Harold. Guidelines for the professional preparation of high school driver educators in New York state. Ed.D., 1976. (S. F. Pechar)

Guidelines were proposed for the professional preparation of NY state HS driver educators based upon a consensus of opinions of selected driver and traffic safety education professionals, including: NY state HS driver educators; driver and traffic safety education teacher educators from colleges and universities in the state and the professional safety staff of the State Education Dept.; and national specialists in driver and traffic safety education. The primary source of the data were 4 sequential questionnaires using the Delphi technique. Based on the priority consensus obtained, and on respondents' judgments of related statements, 22 guidelines were proposed. Respondent opinions varied with their occupations for 55% of questionnaire items concerning the professional preparation of HS driver educators.

NORTH CAROLINA CENTRAL UNIVERSITY (R. E. Townes)
DURHAM, NORTH CAROLINA

238. AMOS, Barbara. Attitudes of college women at Durham College toward physical education. M.S. in Physical Education, 1977, 56 p. (R. E. Townes)

The Wear Attitude Inventory was administerd to 100 women students at DC in Spring, 1975. These Ss had completed at least 1 of the 2 required courses in PE. The Ss, as a group, felt that PE had contributions in the mental, physical, social, and emotional areas; however, they felt the greatest contribution was in the physical area.

239. BOND, Vernon. Alcohol consumption and motor performance. M.S. in Physical Education, 1977, 75 p. (R. E. Townes)
40 male Ss at NCCU, 18-22 yrs old, and ranging in wt from 62.5 to 135 kg, were used to assess effects of ethyl alcohol on motor performance. The variables measured were visual tracking, balance, RT, and HR. The Ss, moderate drinkers, were randomly divided into 4 equal groups. Each group was administered either .0cc, .2cc, .4 cc or .6cc of ethyl alcohol per kg of body wt in the form of 190 proof Ever Clear Whiskey diluted with 10 oz of grapefruit juice. Each S was given 3 30-sec trials on the pursuit rotor, stabilometer, and reaction timer. A continuous progressive 9 min task on the bicycle ergometer was used to examine exercise HR at 600, 900, and 1200 Kpms. The t test for paired differences was used to analyze the data. It was found that after ingestion of .2 cc of ethyl alcohol per kg body wt significant differences occurred in exercise HR at 900 and 1200 Kpms; after ingestion of .4 cc a significant difference resulted in visual tracking performance; and after ingestion of .6 cc a significant difference occurred in resting HR and exercise HR at 900 Kpms.

240. SANDERS, Effie M. Cohesion of athletic and non-athletic groups. M.S. in Physical Education, 1977, 48 p. (R. E. Townes)
The Functional Choice Test was administered to samples of girls' basketball team members, boys' basketball team members, newspaper club members, and chorus club members at Wake Forest Rolesville JHS, Wake Forest, NC. The $\overline{X}$ of choices of the 4 samples were identical. The Newspaper Club had the highest group cohesion and the Chorus Club the lowest, and Boys' Basketball Team had higher group cohesion than the Girls' Basketball Team.

241. SENIOR, William S. The effect of interval training on physical work capacity of freshman and sophomore male college students. M.S. in Physical Education, 1977, 48 p. (R. E. Townes)
31 male fresh. and soph. from the required PE classes at Claflin College, Orangeburg, SC were used in a 12 wk study. The interval training program was conducted on a Monarck Bicycle. The Ss were instructed to maintain a cadence of 60 rpm throughout the test, and the workload was increased 0.5 resistance every 3 min. The interval training program consisted of 2 bouts of 10 min with a 2 min rest between bouts. Interval training had a positive effect on pwc.

NORTH TEXAS STATE UNIVERSITY (R. W. Patton)
DENTON, TEXAS

242. ABADIE, Deborah A. Comparison of the personalities of non-injured and injured female athletes in intercollegiate competition. M.S. in Physical Education, 1976, 73 p. (P. Richardson)

Differences between the personalities of injured and non-injured athletes, injured and non-injured athletes in individual sports, and injured and non-injured athletes in team sports were determined. Ss were 43 female athletes selected from 6 intercollegiate teams. The test instrument was the Cattell 16PF. An inspectional analysis of injury records received from coaches and the athletic trainer was conducted. Alpha was .05. Conclusions of the investigation were that the personality of injured athletes does not differ from the personality of non-injured athletes, that non-injured athletes in individual sports are more self-assured than non-injured athletes in team sports, and that the personality of athletes in team sports does not differ from the personality of athletes in individual sports.

243. BECKFORD, Patricia A. A normative study of the physical fitness of fourteen-, fifteen-, and sixteen-year-old Navajo girls using the AAHPER youth fitness test. M.S. in Physical Education, 1976, 112 p. (R. Patton)

The physical fitness level of Navajo girls 14 to 16 yrs old was measured using the AAHPER Youth Fitness Test and norms established based upon scores determined from test results from 7 schools. These norms were also compared to national norms found in the manual accompanying the AAHPER Youth Fitness Test. The results of this study gave an indication of the overall fitness level of 14-, 15-, and 16-yr-old Navajo girls. Of the 7 test items, the Navajo norms were below the national norm on 5 items and above on the softball throw and 600 yd run-walk.

244. BOMAR, Forrest D. A descriptive study of the professional preparation teaching experiences of male physical education graduates of North Texas State University for the college sessions from 1965 through 1973. M.S. in Physical Education, 1976, 103 p. (B. Gray)

The professional opinion of male PE graduates of NTSU with respect to appropriateness of their professional preparation in association with their teaching experiences was obtained. An opinion questionnaire was developed and used to collect data. Standard and Advanced First Aid and Safety Education, Teaching PE in Secondary Schools and Foundations of HE were the required courses found to be most valuable to the participants in their teaching experiences. Basketball, track and field, football and volleyball were the activities most often used by the participants in their teaching activities.

245. FIKES, Charles R. *A description of leisure counseling services in Texas community mental health and mental retardation centers*. M.S. in Recreation, 1976, 59 p. (D. Austin)

The extent of leisure counseling provided in TX community mental health and mental retardation (MHMR) centers was determined. Data were gathered from responses to a survey sent to the TX community MHMR centers. There was a 93% response rate. Results indicated leisure counseling was not being provided, although some minor components of leisure counseling were being conducted at individual centers. Recommendations were made for expansion of recreation programs, the institution of counseling sessions dealing with leisure related topics on a regular basis, the use of leisure interests assessment instruments, and development of a systematic rec information referral system.

246. GRANTHAM, William C. *An analysis of strength retention during an eight-week walk/jog training program*. M.S. in Physical Education, 1976, 71 p. (R. Patton)

The effects of an 8 wk walk/jog program upon the retention of upper and lower extremity strength was determined. 24 middle-aged male executives from Dallas, TX with a $\bar{X}$ age of 29.0 yrs, a $\bar{X}$ ht of 69.0 in. and a $\bar{X}$ wt of 187.6 lb represented the sample size. Following 8 wks of resistive training, all *Ss* were pretested for strength and endurance measures. The *Ss* then engaged in an 8 wk walk/jog program working between 70 and 80% of max HR. After the training period, all *Ss* were then retested on all strength and endurance measures. A 2-way ANOVA with repeated measures was used to test for $\bar{X}$ group differences between pretest and posttest strength measures. A *t* test for dependent $\bar{X}$s was used to ascertain differences in cardiovascular measurements. Alpha was .05. Results indicated that muscular strength was retained during the 8 wk walk/jog program. No change in upper or lower extremity strength occurred, but significant improvements in $\dot{V}O_2$ and treadmill time were evidenced.

247. HAMLETT, Laurie R. *The effects of self-recording and projected levels of aspiration upon competitive swimming performance*. M.S. in Physical Education, 1976, 75 p. (P. Richardson)

The effects of self-recording of actual performance and the estimation of future performance (level of aspiration) upon competitive swimming times, the relationship between the stated level of aspiration and subsequent performance, and the influence of success or failure upon stated levels of aspiration in subsequent and recurrent competitive swimming trials were determined. Ss were 15 female HS competitive swimmers who met established criteria. 5 Ss utilized self-recording techniques and projected levels of aspiration; 10 Ss did not. Data were analyzed by ANCOVA for 2 independent groups and by regression analysis. Alpha was .05. Conclusions were that the use of self-recording techniques for actual performance does not significantly affect competitive swimming times, that there is a strong positive relationship between stated level of aspiration (goal setting) and subsequent performance, and that both successful performance (decrease in swimming times) and unsuccessful performance (increase in swimming times) generate an increase in stated levels of aspiration in subsequent and recurrent competitive swimming trials.

248. MILES, Robert G. Caucasian, Negro, and Mexican-American attitudes toward recreation program elements within a metropolitan parks and recreation department. M.S. in Recreation, 1976, 89 p. (D. C. Bailey)

The purpose of the investigation was to determine if participant attitudes toward rec program elements varied significantly according to racial origin of the individual. Ss were adults involved in structured and unstructured programs at 6 community rec centers operated by the Dallas Rec Dept. The X^2 test was used to determine significance of the difference among participant attitudes. Results revealed a statistically significant difference among the 3 racial groups with regard to their attitudes toward various program elements. Conclusions were that participants from these 3 racial groups appear to be more different than alike in their attitude toward rec programming.

249. RICHARDSON, Willie R. A study of the relationships between grip strength, wrist flexion, arm length and the velocity of a thrown baseball in male high school varsity baseball players. M.S. in Physical Education, 1976, 56 p. (R. Patton)

The purposes of this study were to determine if: grip strength had a significant relationship to throwing velocity, range of wrist flexion had a significant relationship to throwing velocity; length of the throwing arm had a significant relationship to throwing velocity; and if there was a predictive value to any of the 3 resulting relationships. Ss were 31 varsity HS baseball players, currently in regular season play. Grip strength was measured with a dynamometer, wrist flexion with a goniometer, segmental lengths with anthropometric tapes and throwing velocity with a hand held radar unit. Data obtained were then analyzed by a multiple linear regression and a stepwise multiple linear regression. Conclusions were: grip strength had a significantly positive relationship to baseball throwing velocity, wrist flexion had no significant relationship to throwing velocity; length of the arm had no significant relationship to throwing velocity; and throwing velocity can be moderately predicted (36% shared variance) from grip strength measurement.

250. WALKER, Nancy D. A comparison of perceived exertion ratings of aerobic dance and treadmill performances among college age males and females. M.S. in Physical Education, 1976, 75 p. (P. Richardson)

This study compared ratings of perceived exertion of aerobic dance and treadmill performances under equal workloads and compared ratings of perceived exertion by males and females in aerobic dance and treadmill work. Ss were 26 college men and women in coeducational conditioning classes. HRs were monitored after work bouts and perceived exertion was determined using Borg's RPE scale. Data were analyzed by a 2-way ANOVA with repeated measures. Conclusions were: aerobic dance is perceived as less strenuous than the treadmill under equal workloads and males and females perceive aerobic dance as less strenuous than the treadmill under equal energy bouts.

OKLAHOMA STATE UNIVERSITY (A. B. Harrison)
STILLWATER, OKLAHOMA

251. BUSCHNER, Craig A. The validation o[illegible] racquetball skills test for college men. Ed.D. in Physical Education, 1976, 107 p. (A. B. Harrison)

53 college males enrolled in a racquetball class completed a round robin tournament. 5 skill tests were administered to each S in an attempt to produce a valid test battery for measuring racquetball skill. Tests included forehand/backhand rally, backhand rally, ceiling shot placement, front wall kill placement and repeated volley. The best test battery was a combination of the forehand/backhand rally and ceiling shot placement. (Multiple r=.76) Norms and scoring tables are provided.

252. GORRIE, Douglas D. A curriculum guide for scuba diving instruction. Ed.D. in Physical Education, 1976, 131 p. (B. Abercrombie)

Literature was surveyed, a philosophy was developed and principles of motor learning were examined in order to develop a rationale for the presentation of a curriculum guide for scuba diving. The actual guide is presented in outline form.

253. GREGORY, Larry W. The development of cardio-respiratory endurance: A comparison of continuous and interval training. Ed.D. in Physical Education, 1976, 107 p. (A. B. Harrison)

College male volunteers were randomly assigned to a control group of 5, a continuous group of 7, and an interval group of 9. Pre and post training $\dot{V}O_2$ max was measured on each S. Exp groups ran 2 mi, 5 days/wk, for 6 wks. The continuous group ran at a HR of 162. The interval group ran 3 4-min work intervals at a HR of 174 with a run/rest ratio of 1:1. Both exp groups made significant gains in $\dot{V}O_2$ max. There was no significant difference in $\dot{V}O_2$ max between the continuous and the interval groups.

254. OLDHAM, Max D. The appraisal of the current physical fitness status of 85 volunteer males of the Oklahoma State University faculty and administration. Ed.D. in Physical Education, 1976, 107 p. (A. B. Harrison)

Each S was given a comprehensive battery of physical fitness tests including cardiovascular, respiratory, body composition and a treadmill walk to predict $\dot{V}O_2$ max. Most measures showed normal values. ($\dot{V}O_2$ max = 35.9 ml/kg/min). Amount of activity was significantly related to resting HR, %body fat, VC, and $\dot{V}O_2$ max. There was no significant difference between faculty and administrators on the measures. There was no significant relationship between age and any of the fitness components. $\dot{V}O_2$ max correlated poorly with the fitness test scores.

255. THOMAS, Dan L. The effects of participation in an aerobic training program on male faculty members and administrators at Oklahoma State University. Ed.D. in Physical Education, 1976, 88 p. (A. B. Harrison)

All 85 volunteer Ss were given a comprehensive fitness test battery including cardiovascular, respiratory, body composition and a treadmill walk to predict $\dot{V}O_2$ max. Most Ss had been tested the previous yr as part of another study. It was found that 22 aerobic points/wk were enough to maintain VO_2 max but not enough to increase it. Those who were jogging scored consistently higher on the fitness variables than those using other forms of exercise. ANCOVA and regression equations indicated that gaining more aerobic points/wk would result in lowering resting pulse rate. While there was a $\bar{X}$ gain of from 18 to 22 aerobic pt/wk, there were few significant gains in the fitness scores.

THE PENNSYLVANIA STATE UNIVERSITY (K. G. Stoedefalke)
UNIVERSITY PARK, PENNSYLVANIA

256. ALBERTS, Carol L. Birth order, motor performance and maternal influence. M.S. in Physical Education, 1976, 100 p. (D. M. Landers)

Birth order effects were examined for children's motor performance, and mothers' and children's level of aspiration for future performance in 2 types of situations, 1 in which degree of potential physical harm was low and 1 in which it was perceived to be high. For the low harm anxiety situation a ball rolling for accuracy task was used. For the high harm anxiety task a jumping task was used to ascertain the amount of physical risk a young child was willing to take. Ss were 12 1st and 12 2nd born boys and girls ages 6 and 7 and their mothers. For the low harm anxiety task, 1st borns performed significantly better and had significantly higher levels of aspiration than did 2nd borns. Mothers of 1st borns had significantly higher levels of aspiration for their child's performance than did mothers of 2nd borns. For the high harm anxiety task, 2nd borns jumped from significantly higher hts than did 1st borns, and mothers of 2nd borns had significantly higher levels of aspirations than did mothers of 1st borns. The 1st and 2nd born children did not differ significantly in their level of aspiration for performance on the high harm anxiety task.

257. ARNOLD, Gregory D. Selected citizen attitudes regarding consolidated and independent types of municipal recreation delivery systems. M.S. in Recreation and Parks, 1976, 98 p. (P. Farrell)

The attitudes of selected citizens residing in the Wildwood, NJ, area toward 2 types of municipal rec delivery systems, consolidated and independent, were investigated. The study was conducted to determine if significant attitudinal differences attributable to the Ss age, sex, and municipality of residence would be found with regard to the type of rec delivery system preferred by the Ss. 238 Ss, categorized by municipality, age and sex, made up the study population. Of this no. 144 were local HS students, the remaining 94 Ss were their parents. The self-administered attitude questionnaire contained 14 statements and, combined with charts depicting the makeup of both consolidated and independent rec depts, made up the evaluating instrument. X^2 analysis was used to compute each of the variables under consideration. In line with this analysis, it was found that no significant differences existed between any of the 3 demographic variables concerned and the type of delivery system preferred. This held true even though those favoring the consolidated system far outnumbered those favoring the independent system 124 to 16. From these findings, it was concluded that attitudinal preference, when viewed by municipality of residence, was quite similar. And, both the student and the parent groups appeared positive in their preference for the consolidated system. Considerations for further study include an attitudinal study of local municipal officials dealing with this area of management. Also, the elaboration of a study such as this into other areas of municipal service would be of value.

258. ASTED, Paul C., Jr. A study of materials and aids for the blind in nature centers. M.Ed. in Recreation and Parks, 1975, 92 p. (B. van der Smissen)

Planning guidelines for materials and aids of use to the blind in a nature center were developed by defining nature center components, identifying aids for the blind, structuring statements of practice, and formulating preliminary guidelines. Guidelines were applied by interviewing personnel at 9 selected nature centers providing facilities for the blind. Center components encompassed included indoor facilities, indoor displays, trails outdoors, trail stops, communicating the message. 31 aids and devices were identified, 11 related to safety and mobility and 20 for communication. There were 8 additional desirable practices as part of the guidelines, which could not be classified as either an aid or device.

259. AVIMELEH, Debra L. The interrelationship of need achievement, performance and level of aspiration in beginning fencers. M.S. in Physical Education, 1975, 74 p. (D. V. Harris)

35 coed students from 2 fencing classes in the basic instructional program at PSU were tested. The Bower Test of General Fencing Ability was employed to measure Ss' fencing performance and the Gough ACL produced the achievement scores. A round robin tournament was conducted having Ss record (on the basis of 1-10 points per bout) how they thought they would do against each opponent, to determine level of aspiration. The discrepancy score was the difference between the individual's level of aspiration and actual performance. Data were statistically analyzed using the Mann-Whitney U and the Wilcoxon Matched-Pairs Signed-Ranks Test. Results showed that Ss who surpassed their level of aspiration did not have higher achievement need than those Ss who failed to reach their level of aspiration; KR did not affect subsequent performance; there were no significant differences for average performance scores or % of bouts won for high and low achievers; and males and females did not significantly differ in need achievement, level of aspiration or performance.

260. AYERS, Randolph M. The effects of reinforcement on interaction rate and group approval in small groups with a designated leader. M.Ed. in Recreation and Parks, 1975, 167 p. (H. J. Lundegren)

4 male Caucasian groups of 5 Ss were selectively chosen from the student population at PSU to participate in video taped discussion groups. Each session had a baseline, reinforcement, and non-reinforcement period, each 8 min duration. In the reinforcement period, a designated leader administered positive reinforcement to S perceived as incompetent and negative reinforce-

ment to S perceived as competent. Video tapes were used to record interaction data. Scoring of interaction rates was done by Bales' Interaction Process Analysis and a pre/post Competent/Incompetent Rating Scale (PCIS) ranked and was used to discuss changes in group competency. It was found that when members of a group observe a designated leader's approval of opinions of a S of their group, the group will communicate and interact with that S, and the approval of S will begin to interact more with the group. Also, as a result of this interaction, the group will gain a more favorable opinion of the approved S than they had previously held.

261. BACH, Roberta S. *The effect of a creative drama program on the self-concept of children with learning disabilities*. M.S. in Recreation and Parks, 1975, 61 p. (H. M. Lundegren)

3 classes of children aged 7 to 12 (N=21) classified as learning disabled students from Philipsburg, Woodland, and Clearfield, PA, were administered the Piers-Harris Children's Self Concept Scale at the beginning and end of a 6 wk period. During the 6 wk period, the exp class received 12 lessons in creative dramatics, 1 control class received 6 storytelling sessions, and a 2nd control class received no treatment from the investigator. No significant differences in self-concept were found when the 3 groups were compared on a pre and posttest basis. However, significant differences in a positive direction were found within the creative drama group's self-concept when pre and posttest scores for each class of learning disabled children were analyzed.

262. BAKER, Edward D., Jr. *Change in leadership behavior attitudes effected by participation in basic courses at the National Outdoor Leadership School*. M.S. in Recreation and Parks, 1975, 60 p. (B. van der Smissen)

80 Ss were students at the NOLS in Lander, WY, during summer 1974. NOLS offers a program in mountaineering skills, wilderness conservation and leadership. Each S participated in a basic level 5 wk course and were divided among 6 courses of 3 different types: Wilderness Expedition, Biology Wilderness Expedition, and Mountaineering Expedition. Ss completed the *Leadership Opinion Questionnaire* (LOQ), developed by Fleishman, on the 1st and last days of their course. Scores were grouped according to various characteristics including age, education, and sex of Ss and the type of course in which they participated. Scores were analyzed using a t test for paired samples. Little significant change was found in the leadership behavior attitudes measured by the LOQ from precourse testing to postcourse testing.

263. BATTEN, Christine. The effects of the use of a contingency managed program of reinforcement on the physical fitness achievement of educable mentally retarded adolescents. M.S. in Physical Education, 1976, 106 p. (H. M. Lundegren)

The AAHPER Special Fitness Test for the Mentally Retarded was administered to 30 EMR adolescents 13 to 16 yrs old. Ss were then ranked and equated into 3 groups on the basis of their fitness test scores. Group 1 participated in a 7 wk physical fitness program designed to develop fitness factors tested in the AAHPER test with classes meeting 3 times/wk for 30 min each. This group was reinforced through contingency management. Group 2 participated in the identical fitness program but received no contingency managed reinforcement. Group 3 served as the control group and did not participate in the physical fitness program. Results indicated that, although both fitness program groups improved significantly in their test scores and that the control group showed no improvement, the 2 fitness groups did not show significant improvement in fitness over the control group at the end of the program. No significant difference was detected between scores of the contingency managed and the non-contingency managed groups.

264. BISHOP, Kathryn. The effect of using a slide-tape show as an instructional media device in presenting a craft to senior citizens. M.S. in Recreation and Parks, 1976, 88 p. (H. M. Lundegren)

Ss of this study were 33 residents (15 male and 18 female) from 2 nursing homes in PA. All Ss were 60 yrs of age or older. The researcher developed a slide-tape shown on the construction of a craft, a tape-mosaic jar. The Ss viewed the show and then attempted craft construction following directions given in the show. Ss evaluated the show by completing an Effectiveness Attitude Questionnaire (EAQ). During the activity period, an observer was recording questions and comments on craft construction steps made by Ss on a check list (CL). The EAQ data were presented as frequencies and % of responses to each question by sex. The CL results were presented as frequencies and % of questions asked by sex for each craft construction step and on the positive and negative comments made by sex. The EAQ findings showed a majority of the Ss stated the show was constructed and presented well, the verbal and visual directions given were sufficient to complete the craft, a slide-tape show was an interesting way to present materials, they would like to learn more activities this way, and they preferred a slide-tape show to personal instruction. CL findings: women asked more questions and made more comments than men, a total of 59 questions were asked on craft construction steps, 44 of the questions were covered in the show and most of the remaining questions were asked to receive encouragement and assurance; step 1, check the materials, received the fewest questions (3%); step 2, tape the jar, received the most questions (53%). All but 2 Ss completed the craft successfully. It was concluded that slide-tape shows could be used effectively with senior citizens in presenting to them simple crafts in a manner which substituted for an on-site instructor.

265. BLOUNT, Merry L. The effects of level of extroversion on the acquisition of muscular strength and cardiovascular endurance in college physical conditioning classes. M.S. in Physical Education, 1975, 111 p. (D. V. Harris)
Undergraduate college students in 3 fitness and conditioning classes completed the Eysenck Personality Inventory and participated in a 5 wk course in physical conditioning. The 15 students who scored at least 1 SD above the $\bar{X}$ for extroversion (extroverts) were compared with the 16 students who scored at least 1 SD below the $\bar{X}$ for extroversion (introverts) on pre and posttests of the Cooper 12 min run and 1 repetition max strength test. ANOVA on the pretest data showed no significant differences between extroverts and introverts in performance. A 2-way ANOVA revealed that extroverts and introverts made similar gains in performance during the course. A total fitness index also showed no significant differences between extroverts and introverts when the 2 groups were compared in a Mann Whitney U test.

266. BROOKS, Booker T. Relative effects of running surface, equipment, and competitive test conditions upon sprinting speed of football players. M.Ed. in Physical Education, 1976, 62 p. (C. A. Morehouse)
Ss were 20 members of the 1970 PSU Fresh. Football Team and represented persons recruited for all positions on the team. 2 Dekan Automatic Performance Analyzers (capable of measuring time intervals to the nearest .01 of a sec) using the slightly modified accessory special start switch and line control accessory were the instrumentation. Adjacent fields of natural grass and Astroturf were used for all trials. 2 trials under each condition at distances of 10 and 40 yds were performed. The Pearson product-moment r coefficient and correlated t tests were methods used in statistical analyses. Results indicated that football players are able to run 10 and 40 yd distances faster on Astroturf than on natural grass. The wt of full equipment causes a decrease in the average running velocity over 40 yds but has no practical effect on time in the 10 yd dash. There is no difference in running speeds when football players are timed in a non-competitive and competitive situation. The relationship between running times at 10 yd and 40

yd distances is moderately high on both Astroturf and natural grass surfaces.

267. BULLA, Beth M. The effects of an integrated and segregated activity program on the anxiety state of orthopedically disabled children. M.Ed. in Recreation and Parks, 1976, 98 p. (H. M. Lundegren)

The 15 Ss were 9 mild to severely orthopedically disabled children from the NC Orthopedic Hospital in Gastonia and 6 nondisabled community children. 5 disabled and 6 able-bodied Ss composed the integrated group (A); and 4 disabled Ss, the segregated group (b). Before the 1st and last of 8 activity sessions held at Gaston County YMCA, the State Trait Anxiety Inventory for Children was administered to each group to measure anxiety states (A-State). After these 2 sessions, the Bovard Interpersonal Affect Scale was administered to obtain ratings of self and others concerning like-dislike feelings. Between group analysis of test-retest A-States indicated no significant differences, but a significant difference was found pertaining to a S's concept of how others saw him/her, with the lowest ratings in Group B. Within group analysis showed no significantly lowered A-States in either group, or any significant rise in average group interpersonal affect in Group A. A negative relationship was not clearly evidenced either in Group A concerning average A-States and average group interpersonal affect, or in average A-States and Ss' self-ratings in either group. In Group B, a positive relationship existed between severity of disability and average A-State, but not in Group A. No negative relationship in Group A was indicated between severity of disability and average self-ratings, and little relationship was implied between severity of disability and self-ratings in either group.

268. BURKHART, James A. An analysis of visitor attitudes toward crowding in the Chesapeake and Ohio Canal National Historical Park. M.S. in Recreation and Parks, 1976, 128 p. (M. L. Christiansen)

Visitor attitudes toward crowding were measured. A subproblem was the development of an attitude inventory to measure visitor perceptions of crowding. Development of the instrument involved construction of a conceptual model of crowding which incorporated physical as well as social and adaptive correlates. The instrument was self-administered as a questionnaire within designated sites of the park. The questionnaire was first piloted and then revised for re-administration to a larger sample population. The analysis of attitudes included differences attibutable to both intra-group and inter-group variations. Results identified 5 components of crowding perception. 3 physical components were identified including the amount of space available, the arrangement of the space available, and stress-producing variables such as noise and glaring light. A social descriptive component involved assessing the competition between users for a recreational space. The final component, adaptive responses, sought to assess alternative modes of action due to crowding.

269. CACCESE, Thomas M. *A comparison of the attitude toward physical education and the participation interests of male military veterans with education and the participation interests of male military veterans with non-veterans*. M.S. in Physical Education, 1975, 73 p. (J. D. Gallagher)

*S*s included 150 veteran and 150 non-veteran students attending PSU. Instruments used for data collection were the Wear Attitude Inventory (Form A) and a self-designed activity participation inventory. Major findings were: no significant difference between the veteran and the non-veteran concerning attitude toward PE; activity participation interests were similar; a significant difference between veteran and non-veteran on item 5 of the WAI (. . .take PE only if it were required); 50% of the veteran *S*s had no PE instruction while in the military service.

270. CAPORALE, Andrew D. *The effect of different glide durations upon performance time in competitive swimming*. M.S. in Physical Education, 1975, 90 p. (P. R. Cavanagh)

6 college-age competitive freestyle swimmers served as *S*s. Normal, shortened, and lengthened glide durations were studied; each *S* performed 1 trial of each glide duration on each day of a 3 day testing session. *S*s were instructed to swim 1 length of the pool, perform a freestyle flip turn, and come out of the turn in the glide position. This glide position was maintained until an audible signal, transmitted to a radio receiver worn by the *S*s, was heard, at which time *S*s again began to swim at max speed for the remainder of the pool length. Performance times were recorded by a digital clock which was started automatically by the pressure pad at the instant the *S*s' feet lost contact with the wall at the turning end of the pool; the clock was stopped manually at 15 yds. It was hypothesized that the swimming performance times would be affected by a change in the *S*s' normal glide lengths. Findings indicated that there was no statistically significant effect of the 3 exp treatments upon swimming performance time when the time from the turning end of the pool to 15 yds was considered.

271. CAROTHERS, Gale. *Goal congruency as seen in the United Auto Workers recreation department*. M.Ed. in Recreation and Parks, 1975, 58 p. (P. Farrell)

This study investigated the congruency of rank ordering the national UAW goals by the regional rec directors, analyzed the actual programs which the directors felt exemplified these national goals, and investigated a rank ordering of the NRPA goals by these regional directors. The basic instrument used was a mailed 3-part questionnaire in which the 6 UAW rec directors were asked to rank goal statements and describe programs within their regions. Results were recorded and analyzed using Spearman's rho statistical analysis as well as appropriate descriptive methods. Findings were: there was no significant statistical correlation regarding goal congruency between the UAW and its regional directors, there was similarity among respondents in rank ordering of the NRPA goals, the emphasis between perceived and preferred goals differs among regions as it relates to a regional director, and there was a reliance by the regional directors on summer school and the Walter Reuther Rec Center to fulfill the rec goals of the local union members.

272. CHRISTINA, Frederick. Feelings of anxiety and changes in palmar skin conductance among transcendental meditators and nonmeditators while observing a stress-inducing film. M.S. in Physical Education, 1976, 73 p. (K. S. Clarke)
Psychological stress has been implicated as a contributing factor in the production of a variety of physical illnesses as well as sudden death. This study was undertaken to determine the degree of psychological stress experienced by transcendental meditators and nonmeditators while observing a stress-inducing film. Degree of stress was measured by changes in palmar skin conductance recorded during threatening scenes of the film and self-reports of anxiety following the film. The stressor was an industrial safety film entitled "It Didn't Have to Happen." This film depicts 3 accidents resulting in bodily injury. Anxiety was measured with the Affect Adjective Check List developed by Marvin Zuckerman while skin resistance was measured by the Keithley Model 160 Digital Multimeter. Data were collected on 17 transcendental meditators and 16 nonmeditators. No significant differences were found between groups in skin conductance changes during the accident scenes. Meditators reported less prefilm and postfilm anxiety combined ($p < .05$) than did nonmeditators, although neither the prefilm nor postfilm anxiety score respectively was significantly different from that of the nonmeditators. The skin conductance responses of meditators with 6½ mo or less meditation experience were significantly ($p < .05$) smaller than the responses of meditators with more experience, although there was no effect of meditation experience on postfilm anxiety.

273. CONRAD, Michelle. A comparison of children's learning under different program structures in a resident outdoor school. M.S. in Recreation and Parks, 1975, 112 p. (B. van der Smissen)

The effect of choice of participation in learning activities upon the attainment of objectives for those activities was investigated. 68 5th and 6th grade students participated in a 4 day resident outdoor education program during which the 36 Ss in the exp group chose the learning activities in which they would participate, while control Ss were not given a choice. Program activities included water ecology, forest plants, a trip to the graveyard (including map and compass work), and a survival simulation. Attainment of objectives was measured with a written, short answer test before and after the outdoor school program. Findings were: although all Ss made significant gains in attainment of objectives from pretest to posttest, there were no significant differences in attainment between those Ss who were allowed to choose their activities and those who were not.

274. CRAGGS. Jennifer L. Attitudes of psychiatrists and therapeutic recreators toward the effects of minor tranquilizers on the motor functioning of participants in a therapeutic recreation program. M.S. in Recreation and Parks, 1976, 85 p. (H. M. Lundegren)

30 psychiatrists (P) and 22 therapeutic recreators (TR) employed in 4 institutions serving the mentally ill in the Commonwealth of PA, responded to a 30-item Likert type scale and questionnaire which measured their attitudes regarding the use of minor tranquilizers and their effects on the patients' motor performance. A Likert Attitude Scale Analysis (LKRT) was made. An independent t test was utilized to determine whether or not there were any attitude differences between the Ps and TRs. Descriptive statistics were used to develop the background profile of the Ss. The demographic data disclosed that of the TRs involved only 14% had rec backgrounds. Of the Ps, 69% had 10 or more yrs of field experience while 68% of the TRs fell into the 7 yr or under group. There was no significant difference in attitudes between the 2 professional groups concerning the use of the drugs; both groups favored use. The variance of attitudes of the Ps indicated disparity among the group toward the use of drugs. Both the Ps and TRs maintained similar beliefs that the effects of the minor tranquilizers on the patient are not detrimental to motor performance. The alpha coefficients of reliability for the total test and its sub-scales were .81, .68 and .79, respectively.

275. DAVIS, William W. An evaluation of the utilization of the Whipple Dam State Park for selected activities which would be complementary to the Stone Valley Recreation Area. M.S. in Recreation and Parks, 1975, 195 p. (M. L. Christiansen)

This study evaluated the feasibility of the use of the Whipple Dam State Park for beach swimming, family camping, and group picnicking, based upon the management objectives, development norms, and administrative policies of the University-owned Stone Valley Rec Area pertinent to each activity. Identification of these policies and procedures was accomplished through the construction of an activity analysis for each activity. Results of the activity analyses were reflected in the resource requirements planning methodology chosen for the study. From a list of 76 resource descriptors, applicable environmental, physical planning conditions were identified, ranked, and criteria developed specifically for the study. Resource base data were collected from on-site inspection and visits to the Bureau of State Parks offices. Comparison of the applicable quantified conditions to the resourse base data generated the study's findings. Conclusions and recommendations for future development and use of the resource requirements planning methodology were based upon the findings.

276. DIAMOND, Elliot. Short-term relationships of transcencental meditation (TM) with drug use, drug attitudes, and selected psychometric variables among college students. M.S. in Physical Education, 1976, 70 p. (K. S. Clarke)

Ss of this study were men and women between 18 and 24 yrs of age enrolled at PSU and were assigned to 1 of 4 groups according to level of interest and time practicing TM. Respondents completed a test battery which included a demographic information section, a drug use scale, a drug attitude scale, a 5 part sensation-seeking scale, and 2 anxiety scales. New meditators were retested to determine effects of the 4 day TM initiation period. Findings generally supported the contention that practice of TM may influence an individual's drug attitudes and anxiety level in a conservative direction. TM was not found to be associated with an alteration of one's drug use behaviors or sensation-seeking level. Also, new meditators reported the same effects of TM as reported by the experienced meditators as early as 4 days after initiation into the practice of TM, but were not significantly different from the other control groups. Lastly, it was inconclusive whether certain personality characteristics and drug attitudes may lead an individual to learn TM.

277. DIRENFELD, Bonnie B. A study of recommended administrative practices of recreation department sponsored day care services. M.S. in Recreation and Parks, 1976, 212 p. (P. Farrell)

A set of administrative practices of rec dept sponsored day care was established through use of a modified version of the Delphi Technique. 2 successive rounds of questionnaires were sent to both PA day care center operators and the PA State Advisory Committee on Child Day Care. The purpose of the 1st questionnaire was to see where a consensus among day care experts existed. The purpose of the 2nd round survey was to finalize a set of guidelines for preschool day care operation. Those 2nd round standards with a 50% or greater acceptance became the final guidelines. This study also included the rationale for rec depts becoming involved in providing preschool day care services.

278. DONODEO, John. Influence of information sources on nutritional misconceptions of New York City high school track and field coaches. M.S. in Physical Education, 1975, 95 p. (K. S. Clarke)

A modification of the McCarthy nutrition test instrument, consisting of 65 items and an accompanying questionnaire were designed to identify nutritional information sources, were administered to 78 HS track and field coaches from NYC. 70 completed forms were returned for analysis. $\overline{X}$ incorrect (misconception) scores were established for the total sample and according to subgroups characterized by yrs experience in coaching and associated with the coaches' primary sources of nutritional information. One-way ANOVA and Duncan's New Multiple Range Test determined whether significant differences existed in the coaches' nutritional misconceptions when associated with these variables. The findings revealed a 27% $\overline{X}$ misconception score for the coaches. Differences in nutritional misconceptions when associated with coaching experience approximated but did not quite reach the .05 level of significance. Personal judgment (26%), college-level nutrition course (23%), and professional persons (21%) were the most widely used primary sources of information by the coaches. Coaches who reported a college-level nutrition course as a primary source had significantly fewer misconceptions than those ranking personal judgment or nutritional pamphlets. Although not reaching significance, coaches ranking a college course had fewer misconceptions than those ranking professional persons, magazines and journals, books and texts.

279. DORFMAN, Renee F. The effects of the Frostig move-grow-learn program on the sensory-motor skills of trainable mentally retarded children. M.Ed. in Physical Education, 1975, 119 p. (H. M. Lundegren)
The effect of 2 types of PE programs on the sensory-motor skills of the TMR children was studied. The exp group (N=5) received the Frostig M-G-L Program and the control group (N=5) received a program of traditional PE activities. Ss in both groups met for 30 min/day, 2 days/wk for 6 wks. Each of the 10 TMR Ss was pretested individually with the Frostig Movement Skills Test Battery. At the conclusion of the 6 wk instructional program, both the exp and control groups were again administered the Frostig. Between group analysis at the beginning and at the end of the program found no significant differences in sensory-motor skills between the control and exp groups. Within group comparisons of the pre-post scores for the test battery showed significant improvement for the exp group on the shuttle run and walking board subtests and for the control group on the shuttle run subtest. Most individual performance changes in the 5 sensory-motor areas measured were in the areas of balance and flexibility. Test reliability, as measured by the Pearson r on 33 children, ranged from a high of .95 to a low of .57 with 9 of the 12 Frostig subtests having a reliability of .79 or higher.

280. DUNN, Thomas L. The origin and early development of the Eastern Intercollegiate Gymnastics League, 1899-1940. M.S. in Physical Education, 1976, 126 p. (J. A. Lucas)
An attempt was made to construct an accurate account of the evolution of men's intercollegiate competitive gymnastics within the EIGL from its inception until 1940. After a brief overview of the major trends in gymnastics from 1810 to 1899, it was determined that the EIGL began in 1900 as the Intercollegiate Association of Amateur Gymnasts of America. In 1925, the IAAGA was reorganized and renamed the EIGL. Data were obtained principally from the following primary sources: min of meetings, constitutions, by-laws, rules, newspapers, correspondence, scrapbooks, handbooks, programs, and interviews. Gymnastics was a late comer to the intercollegiate athletic scene due to its early association with PE, and remained a very minor sport during the period under study. Students founded the EIGL, and it was not until 1939 that executive control of the League slipped out of their hands. The unstable composition of the EIGL was a result of fluctuating student interest and the laissez faire attitude of athletic administrators. It was not until coaches became permanently affiliated with the EIGL that the League knew any stability.

281. DZIUBEK, Daniel R. Action socialization experience as an instrument in assessing interaction behaviors in an outdoor setting. M.S. in Recreation and Parks, 1976, 92 p. (B. van der Smissen)

Action Socialization Experience (ASE), a group problem-solving involvement, is used as a program strategy in resident outdoor education programs. A behavior category system was devised to be used in observing exhibited behaviors of ASE participants (4 learning groups of 6th graders). The system consists of 10 categories: informing, directing, compliance, supporting, questioning, neutral, disagreement, refusal, reproval, hostile. The groups were videotaped during their participation in several ASE tasks. Tapes were viewed and children's behaviors categorized, using the devised system. Interactions in regard to differences intragroup and intergroup, male-female, and behavior categories were examined, including nature of the relationships, position of individuals in group, leader behaviors. Conclusions were: The ASE was found feasible for assessing interaction behaviors; the category system encompassed all of the exhibited behaviors.

282. ESPOSITO, Denise E. Changes in the self perception of physical education majors during a student teaching experience. M.S. in Physical Education, 1975, 91 p. (D. V. Harris)

Changes in the self perception of student teachers in PE were determined. Ss were 11 males and 8 females student teaching on the HS level. The Adjective Check List (ACL) was used to measure self-perception and the self as perceived by others. Tests were administered 2 wks prior to the teaching experience, during the 5th and 9th wks of the experience. A student teacher evaluation form was used to separate those who were graded "A" from those who were graded "B" or below for the purposes of comparison. This form was completed by 1 class of students taught by the student teacher, the cooperating and supervising teachers. A significant difference between reference (general) self and situationally specific selves (teaching self) was found. When describing themselves in general, the student teachers rated themselves higher on the scales of change, autonomy, unfavorable and the no. of adjectives checked. The situationally specific self-perception of a student teacher did not change during the teaching experience; this teaching self was related to how the student teacher saw himself being perceived by others. A student teacher's self-perception in a teaching situation was not related to his performance. Finally, the self in general was not determined to be a predictor of success in a teaching situation.

283. FELTZ, Deborah L. Effects of observer sex and informational-motivational components of model's demonstration on motor performance. M.S. in Physical Education, 1976, 82 p. (D. M. Landers)
Male and female 5th and 6th grade Ss were compared under 4 conditions comprising the presence or absence of informational and/or motivational cues using the Bachman free standing ladder-balance task. From 80 Ss employed, 10 males and 10 females were randomly assigned to each treatment in a S's Sex x Motivational Cues x Informational Cues (2 x 2 x 2) factorial design. In the informational-motivational cues condition, a model demonstrated (imparted task information) and also gave verbal KR of the model's performance on the ladder as a motivational incentive. In the motivational cue only condition, no demonstration was provided by the model; instead, the model merely told the Ss how high he/she climbed on the ladder. In the informational cue only condition, a model demonstrated but gave no verbal KR. In addition, these 3 groups were compared to a no cue condition, where the Ss received no demonstration or verbal KR. Prior to the exp, Ss were given the Children's Dependency Scale to check for the effect of dependency on imitation. Analysis of the dependency scores indicated that females had significantly higher dependency scores than males. Analysis of the 30 performance trials indicated that males had higher average performance scores than females on the performance trials and that Ss receiving a model demonstration had higher performance scores than Ss not given a model demonstration. Motivational cues provided by knowledge of the demonstrator's performance did not appear to affect performance on the Bachman ladder.

284. FERRELL, Donald T. Changes in self concept between starters and substitutes during a basketball season. M.S. in Physical Education, 1976, 82 p. (D. V. Harris)
14 members of PSU's basketball team were administered the Adjective Check List (ACL) 3 times: prior to the start of the season, when the starting lineup was first announced by the coach, and, finally, following the completion of the last game. Those designated as starters had to start 5 consecutive games during the season; all others were substitutes. The study found: no significant differences in the self concepts of varsity basketball players at the beginning of the season, no significant differences between starters and substitutes when tested immediately following the announcement of the starting team; at the end of the season, regular starters scored significantly higher than substitutes on self confidence and exhibition.

285. GAGNON, Micheline. Biomechanical comparison of the standing and kneeling sprint starts. Ph.D. in Physical Education, 1976, 216 p. (R. C. Nelson)

Selected kinematic and kinetic factors of the sprinter's preferred kneeling start technique and 3 exp positions of the standing start technique in skilled and less skilled female sprinters were analyzed. 6 Ss were photographed in the set position, during the start, and during the performance of the 1st 2 strides of the race. Motion pictures were synchronized during the start with force events obtained from 2 force platforms. Times were obtained at successive 10 meter intervals of the 50 meter sprint. Results indicated: that the kneeling and standing starts differ widely in the biomechanical factors of the start and pattern of velocity development during the sprint race; that block spacing in the standing start technique only slightly influences the performance of the start and the velocity development during the sprint race, but of the 3 standing positions, the elongated position is associated with better biomechanical characteristics of the start and better time performances at 50 meters; and that the type of response to the starting techniques is dependent upon the level of ability of the sprinters.

286. GOLDFUSS, Arnold J. Evaluation of rotational stability of the knee and its relationship to lateral knee stability. Ph.D. in Physical Education, 1976, 147 p. (C. A. Morehouse)

Left and right knees of 20 male Ss (N=40) were evaluated for rotational and lateral stability. These data were used to establish reliability of knee measurements, to determine whether measures of knee rotation were similar at knee positions of 90° and 120°, and to determine the relationship between lateral and rotational knee stability. Initial attempts were also made to establish validity of knee rotation evaluations by correlating them with angular displacements of a pin which was strapped around the S's leg, just below the knee. Validity of knee rotation evaluations was assessed further using 19 fresh cadaver knees. The criterion measure of knee rotation was the angular displacement of a pin which was inserted into the tibial tuberosity. Knees of 25 adult male Ss were measured for knee rotation by 2 evaluators for the purpose of determining objectivity. The apparatus provided valid, reliable and objective measures of knee rotation and yielded evaluations which were similar at knee flexion positions of 90° and 120°. No relationship was found to exist between measures of lateral and rotational knee stability.

287. GOYETTE, Cynthia L. A methodological study of the masculine-feminine appropriateness of selected sports for men and women. M.S. in Physical Education, 1975, 95 p. (D. V. Harris)

2 types of stimuli for assessing opinions toward selected sports for men and women were compared. 59 male and female college undergraduates representing varying levels of experience in sports were included as Ss. Ss completed a masculinity-femininity rating, adjective selection and rank ordering of a list of 13 sports by name (written stimulus) and a series of 26 sport photographs (photographic stimulus). The photographs were of a male and a female model attired in the appropriate uniforms for each of the 13 activities on the list of sports. The masculinity-femininity ratings of the females showed that volleyball was rated significantly more masculine when viewing the photographs, while football, gymnastics, lacrosse and swimming were rated significantly more feminine. The masculinity-femininity ratings of the male showed that football was rated significantly more feminine when viewing the photographs while basketball, dance, fencing, gymnastics, lacrosse, soccer, swimming, track field events, track running events and volleyball were rated significantly more masculine. The adjective selection and rank orderings showed no significant differences between the list of sports by name and the sport photographs. It was concluded that the photographic stimulus did serve to spread the masculinity-femininity ratings out along the continuum.

288. GREENE, Howard D. The effectiveness of feedback with the Withall Index concerning camp counselors' verbal behavior. M.S. in Recreation and Parks, 1976, 101 p. (B. van der Smissen)

32 Ss were counselors at Camps Betsey Cox and Sangamon in Pittsford, VT, during Summer 1975. An intervention group of 16 counselors was introduced to and observed with the Withall Social-Emotional Climate Index and provided with feedback concerning their interaction with campers. A control group that had no knowledge of the Index was also observed. Special attention was made to assure that observations during all types of camp activities were included. The t test and ANOVA were used to determine if any significant differences occurred in the camper-centeredness of the 2 groups over the 8 wk summer camp experience. Results indicated significant gains ($p = .01$) in the camper-centeredness of the intervention group, and the intervention group was significantly ($p = .01$) more camper-centered when compared to the control group. Importance of camp leadership, modeling by jr. counselors, and activity planning in development of camper-centeredness was also noted.

289. HAAS, Glenn E. Relationships among campers in Shenandoah National Park as related to social interaction, activity patterns, camping style and descriptive characteristics. M.S. in Recreation and Parks, 1975, 153 p. (B. van der Smissen)

Data were obtained from 361 questionnaires returned by campground registrants. Forms distributed by the park rangers included a people interaction matrix, activity interaction matrix, and descriptive variables. None of the descriptive variables was distinctively associated with activity participation, although respondents in the high social status class had a slightly higher % of participation, as did the married respondents, and respondents with 3 or more children; also, the selection of activities was found to be slightly different for the varying life stages. Distance was found to be a factor in the amount and level of social interaction; the farther the distance from the respondent's campsite, the less interaction was experienced. The only descriptive variable associated with amount or level of social interaction was length of stay. Campers of the 3 camping styles (tent, tent trailer, travel trailer) were found to be significantly different in their marital status, no. of children, life stage, and 1st visits to the National Park; also, there was a considerable age difference for the main wage earners of the 3 camping styles. There was no difference in the amount of interaction among the respondents of the 3 camping styles. The 7 most participated in activities for each camping style were the same.

290. HAIRE, Elisa. Sport anemias in women distance runners. M.S. in Physical Education, 1976, 57 p. (E. Buskirk, J. Hodgson)

4 long distance runners and 6 untrained young women were compared for hematological variables, iron stores, blood volume, body composition, and max O_2 consumption. The runners were leaner, showed an increased fitness level, had more efficient hematological systems, and larger blood volumes. Runners had more hemoglobin per erythrocyte. It was also observed that iron deficiency anemia can occur in the well-trained runner.

291. HATFIELD, Brad D. Expectancy effects upon appraisal of gross motor performance. M.S. in Physical Education, 1976, 117 p. (D. M. Landers)

The study determined whether objective evaluation of a gross motor skill would be biased by introduction of positive, negative, and netural experimentally-induced performance expectancies. Whether the stereotyped behavior characteristics associated with the performer's somatotype (endomorph or mesomorph) would influence objective performance appraisal was also examined. 45 male PE majors were randomly divided into 3 expectancy conditions in which they subjectively evaluated the stabilometer performance of an endomorphic and mesomorphic task performer. These expectancy conditions were created by the experimenter providing standardized preevaluative information regarding the performer's errors. From these standardized performances and S's subjective estimates. algebraic difference scores were calculated and used for data analysis. The hypothesis that the positive-expectancy performers would be attributed less error in relation to their actual scores compared to the negative- and neutral-expectancy performers was confirmed ($p < .05$). The hypothesis that the mesomorphic performer would be attributed less error as compared to the endomorphic performer was not supported. A postexperimental questionnaire serving as a manipulation check revealed that positive-expectancy evaluators rated the performers in much more positive terms (e.g., more intelligent and adjusted) than the negative-expectancy group.

292. HERMANN, Marilyn A. Changes in self and other's perceptions during a coeducational volleyball class. M.S. in Physical Education, 1975, 116 p. (D. V. Harris)
Undergraduate students enrolled in coed (N=54) and segregated (N=44) volleyball classes were administered the Gough ACL at the beginning and at the conclusion of these 5 week activity courses to determine social self-profiles, participant self-profiles, males' perception of females, and females' projected perception. Data were analyzed using an ANOVA with Repeated Measures for Unequal Cell Sizes program (BMDO2V) and the Newman-Keuls test. Results indicated that: males and females do perceive themselves differently as they move from a social situation to a participant situation; differences do exist between the females' participant self-profile and the females'projected perception; self-perceptions of coed class participants do not change more during a 5 wk volleyball class than do those of segregated class participants; the males' perception of female and the females' projected perception do not change more through participation in a 5 wk coed volleyball class than in a segregated class. Previous experience in coed classes might have influenced the results.

293. HERZIG, Michael. Principles and guidelines for the improvement of cardiorespiratory fitness in asymptomatic adult men. M.S. in Physical Education, 1976, 118 p. (K. G. Stoedefalke)
The study intended to guide physical educators who are involved in exercise programs for asymptomatic men ranging in age from 25 to 70. Age related changes in the cardiorespiratory system were summarized, and training effects occurring in this system were reviewed. Aspects such as intensity, frequency, duration

and type of exercise were discussed. It was concluded that properly designed exercise programs for healthy adult men must consist of 3 sessions a wk, 30 to 60 min each, and at an intensity from 70 to 85% of a person's tested max HR. A 5 to 10 min warm-up period should precede 20 to 30 min of rhythmic, continuous, endurance type of activity. This should be followed by 15 min of noncompetitive game activity, and be terminated by a 5 to 10 min cool-off period. Based on continuous evaluation, target levels and objectives must be adjusted to meet individual needs, interests, and capabilities. Contraindications must be taken into account. Participants must be taught to pace themselves as well as monitor their own HR. Supervision and constant control are essential to avoid straining and hazards. Exercise must be enjoyable in order to motivate adults to attend and adhere to the program.

294. HEWKO, Daniel J. Littering attitudes and behavior of fourth grade children in the natural environment. M.Ed. in Recreation and Parks, 1976, 97 p. (B. van der Smissen)
The study measured children's attitudes toward littering and determined whether littering behavior is affected by littered and not littered conditions on a nature trail and by leader littering behavior. Ss (N=268) were 11 classes of 4th grade students from the State College ASD, who participated in a field trip offered to classes in the dist. Each class was randomly divided into 2 groups. Littering attitudes were measured by a paper and pencil attitude instrument. Groups were exposed to various trail conditions (littered or not littered) and various leader behaviors (dropped, pocketed, or without candy bar wrapper). Littering behavior was measured by counting discarded wrappers from candy bars distributed to group members. No relationship was found between group littering attitude score and group littering behavior. Littering behavior for all trail conditions and leader behaviors was similar and did not differ significantly.

295. HOLT, Kenneth G. The immediate aftereffects of overload on a slow, self-paced positioning movement and the associated kinesthetic figural aftereffects. M.S. in Physical Education, 1976, 110 p. (R. W. Christina)
The aftereffects of overload on a previously learned slow, self-paced positioning response was investigated in terms of positioning accuracy, consistency, and MT. In addition, subjective estimates of positioning accuracy and movement speed were compared to the objective measures to determine the aftereffect of overload on the perception of these parameters. Ss learned a voluntary positioning response of the left arm supported in the transverse plane at shoulder ht. 2 groups of 20 male college students performed 60 trials of the positioning

task, followed by 5 trials of 1 of the following conditions: movement of the left arm against a constant resistance (overload) to a physical stop placed at the criterion position, movement of the left arm without resistance to a physical stop placed at the criterion position. 10 trials of the criterion movement were then completed. Addition and removal of overload led to greater errors in positioning accuracy and less consistency and an increase in movement speed. Perceptual distortion was observed in terms of subjective estimates of positioning accuracy, but not movement speed.

296. HSIEH, Yuan-Chuan. Systems design on a hypothetical dual-feedback model in the learning process and simulation of a selected motor skill. Ph.D. in Physical Education, 1976, 192 p. (S. Mann and K. Stoedefalke)

2 groups of matched male Ss (N=28) from a 9th grade population were used to test the learning efficiency and transfer effects of a selected motor skill, the basketball dribble, through the designed instructional model. A pretest was conducted prior to the formal research in order to appraise the effectiveness of the research design and hardware arrangements. The procedure used in the exp group (E) was a profile pattern based on the systems approach of the suggested instructional systems model, while the learning method used by the control group (C) was a traditional learning method (teacher-centered). Comparisons were made between the time consumption and the no. of modules studied by each S in both E and C. The findings indicated that the suggested instructional model yielded excellent individualized results. It provided opportunities for the creation of pluralistic educational environments by transfer task and facilitated the enrichment of the learner's ability to evaluate or appraise his potential educability. The instructional model also enabled the learner to function in a heuristic manner which facilitated the solution of multiple outcome problems and individualized the instruction to best suit his particular needs in the total learning process.

297. HUNTER, Susan J. The relationship of total estrogen concentration and menstrual cycle phase to the performance of three reaction time tests. M.S. in Physical Education, 1976, 97 p. (D. V. Harris)

RT performance during the premenstrual-menstrual phase of the cycle and the relationship of plasma estrogen concentration to RT were investigated. Ss were 18 young women using oral contraceptives and 20 young women normally cyclic. Testing once per wk throughout 2 menstrual cycles consisted of simple, complex and choice RT tests and blood sampling for total plasma estrogen level as determined by radioimmunoassay. $\bar{X}$ Phase 1 (5 days pre- and post-menses) and Phase 2 (the remaining days of the menstrual cycle) RT scores for each S on each task were used in several 2 x 2 variance analyses with repeated measures on the last factor. Estrogen data were analyzed identically for all Ss. No significant differences in performance were found on the simple and complex tasks. RT was significantly longer in Phase 1 than in Phase 2 for those normally cyclic on the choice task but not in the group using oral contraceptives. Total estrogen levels were significantly lower in those using oral contraceptives than in the normally cyclic Ss. A direct relationship between estrogen concentration and RT performance could not be supported by the findings.

298. IIDA, Minoru. Independence of Japanese kindergarten children associated with a five-day resident camp. Ph.D. in Physical Education, 1976, 133 p. (B. van der Smissen). The Kindergarten Rating Scale and Home Independence Rating Scale was given to 156 Ss whose X age was 5 yrs 11 mo. The tests were rated by the teachers and mothers, respectively, and were administered to both the treatment and control groups prior to the camp experience and 3 times following camp (2-3 wks, 6-7 wks, 7 mo later). Measures of camp independence, using the Camp Independence Rating Scale, were taken by the camp staff. Findings: A resident camp is effective in development of independence of kindergarten (K) children in the K and in the home. Sex, birth order, and age differences are unrelated to independence in camp. Children who participated in camp have mothers with early independence expectations for them, but parental early independence expectations are unrelated to the independence of their children while in camp. K children can make friends in camp, but their popularity is not related to the extent of independence shown in camp. A majority of children (80%) are satisfied with the camp experience; children who are independent in camp are more satisfied with the camp experience.

299. JARRELL, Donald R. Goal congruence in the American Red Cross national small craft schools: June 1974. M.Ed. in Recreation and Parks, 1975, 215 p. (B. van der Smissen) The 553 participants (students, staff and director) of the 7 NSCSs were Ss for this study of goal congruence (agreement between perceived and preferred means for school goals). 32 goal statements were rated by 352 of the Ss on 2 (perceived and preferred) scales (0 to 5) on the questionnaire administered by the NSCS director. Hypothesis: increased exposure to previous ARC safety programs is associated with increased goal congruence (rejected); greater goal congruence among staff than students (accepted); Ss value the preferred importance more than the perceived importance of the goals (supported). Greatest variation in goal congruence was attributed to section of

enrollment (different Instructor Trainer). Stricter selection and training of ITs was recommended. Comments written by Ss were tabulated and recommendations made based on these (basic skills prerequisite and fewer rules). It was also recommended that greater emphasis be placed on goals in the Teaching Skills and Methods and Instructional Materials categories.

300. KATZ, Moshe. A comparative analysis of the female standing and crouch sprint starts. M.S. in Physical Education, 1976, 45 p. (R. C. Nelson)

Kinematic factors of the medium crouch start and elongated standing start were studied by using cinematographic techniques and an electronic timing system. 4 female sprinters served as Ss. Training sessions were held to provide practice in the starting techniques. A computer program was used for analysis of data derived from the film and timing units. Results revealed a no. of differences between the 2 starting techniques. In the "set" position the center of gravity at the standing start was higher and closer to the starting line. The standing start in the 1st 8 strides was characterized by: smaller take-off angle, larger touch-down angle, greater stride length, longer time of support, shorter time of non-support, and greater knee lift angle. The temporal and velocity analysis of the 100 m. sprint indicated that the standing start provided better performance from the 1st stride up to 10 m. of the race, while the crouch start was more efficient for time performance at the blocks and from 50 to 100 m. of the sprint. From these results it was concluded that the standing start had an advantage in the beginning of the race while this advantage was lost by 50 m. in favor of the crouch start.

301. KAUFFMAN, Lindsey M. The influence of educational programs upon attitudes toward contraception among unmarried female university students. M.S. in Physical Education, 1976, 91 p. (K. S. Clarke)

The relative influence of a human sexuality course upon attitudes toward contraception was determined. Data were collected by questionnaire from 77 exp. group Ss, 73 control group Ss, and 165 reference group Ss. Findings indicated that a majority of the Ss (54.7%) had experienced sexual intercourse. Most Ss who had experienced intercourse experienced coitus by the age of 18. 5% of the Ss reported they had been pregnant and none had had the baby. No significant shift in attitudes toward contraception was recorded upon completion of either the human sexuality course or the other HE courses. There was an apparently predominant favorable attitude existing prior to the study. Those who had experienced sexual intercourse recorded significantly more favorable attitudes toward contraception than those who were not experienced. The reference group recorded significantly higher attitudes toward contraception than did the exp. or control groups. It was concluded that no significant change among never-married females' attitudes toward contraception was associated with exposure to a course in human sexuality. Attitude scores toward contraception prior to the course experienced already were in the high (favorable) range. Experience with sexual intercourse was associated with favorable attitudes toward contraception.

302. KELLY, Gordon R. An analysis of the effects of the four-day workweek on leisure time, leisure spending and leisure travel. M.S. in Recreation and Parks, 1976, 117 p. (P. Farrell)

The effects of the 4-day workweek on leisure time, leisure spending, and leisure travel were investigated. Questionnaire data were collected from 168 and 153 employees of a large Canadian company 6 mo and 18 mo, respectively, after initiation of a 4-day, 40-hr workweek. The Ss in this study were 136 employees of the company, 25 management and 111 non management, who participated in both the 1st and 2nd evaluation. The majority of the Ss were male (93%), married (86%), between 26 and 45 yrs of age (61%), and had less than 20 yrs service with the company (69%). The majority of Ss in both the 1st and 2nd evaluation viewed the 4-day workweek favorably, and their opinion was perceived as being shared by both coworkers and family. The 4-day workweek effected either no change or change in a positive direction in the S's leisure time expenditure, leisure spending, and leisure travel. The long-term effect of the 4-day workweek on leisure time, spending and travel was found to be positive. No consistent relationships were found between the background variables (yrs of service, marital status, age, and personnel level) and leisure time expenditures, spending, travel, and opinion of the 4-day workweek.

303. KLEIN, William H. A test of the proprioceptive trace and input hypotheses in anticipatory timing. M.S. in Physical Education, 1976, 111 p. (R. W. Christina)

The purpose of this study was to determine whether conditions reflecting the trace hypothesis, input hypothesis, and no movement have differential effects on the timing of a discrete motor response. The anticipatory timing task required that Ss judge a 1.5 sec interval, and respond by lifting their right index finger off a response key. Trace conditions were represented by passive left elbow flexion prior to the timing interval, and input, by the same movement during the interval. EMG was used to check that movements were actually passive. It was assumed that the passive movement produced proprioceptive feedback which Ss could use to aid their timing. 48 Ss were randomly assigned to the 3 groups, with the restriction that each group have 8 women and 8 men. Each S received 50 test trials, with explicit KR being given during a 15 sec intertrial interval. Results indicated that individuals can use proprioceptive cues generated from a passive movement to facilitate their timing of a discrete motor response. During acquisition, the input condition enhanced anticipatory timing more than the other conditions based on CE and VE. Throughout performance, input and trace were found to enhance timing more than no movement based on VE.

304. KNIGHT, Diane C. The effect of participation in art activities on the self-concept of institutionalized alcoholics. M.S. in Recreation and Parks, 1975, 87 p. (H. M. Lundegren)
29 alcoholics, admitted to Serenity West Alcoholism Treatment Center in Erie, PA, were administered the Tennesseee Self-Concept Scale at the beginning and end of a 2 wk exp. period. The Ss were randomly assigned to an exp group involved in process-oriented art activities (i.e., painting), a 2nd exp group was involved in product-oriented art activities (i.e., crafts), and a control group participated in the regularly scheduled rec program. No significant differences in self-concept scores were found for pre and posttest comparisons among the groups. In terms of within group pre and posttest comparisons, the process group did not evidence any significant differences. In the product group, a significant positive change was found in the Family-Self dimension, while in the control group significant positive changes were found in Total Variability, Behavior, and Moral-Ethical Self. Pre and posttest self-concept score range comparisons with Fitts' alcoholic group showed most Ss within Fitts' range on 6 self-concept dimensions. Only the process group did not show positive differences; both product and control groups evidenced 2 positive differences and 1 negative changes when compared to the typical alcoholic sample of Fitts.

305. KOFKE, Crystal L. The association between participation in Girl Scout Outdoor Program and goal achievement. M.S. in Recreation and Parks, 1975, 213 p. (B. van der Smissen)
The association between quantity of participation in selected types of Girl Scout Outdoor Program (GSOP) and the extent of achievement of the goal that each girl who participates in GSOP will increase her ability to relate constructively to the natural world (i.e., develop a positive environmental attitude) was investigated. A sub-problem of the study was to develop an instrument to measure environmental attitude. The 668 Ss, ages 7-17, were Girl Scouts (GS) in the Hemlock GS Council. Each

was given a background questionnaire and an environmental attitude inventory. 3 separate inventories were developed for each age level consisting of 4 subscales with Coefficient Alpha Indexes of Reliability for each of the 4 instruments ranging from .840 to .898. %s of participation in certain types of experiences that were calculated indicated that participation increased with age. Findings indicate that there is an association between quantity of participation in selected types of GSOP and achievement of a positive environmental attitude, particularly for Brownies who have any experiences, and Seniors who have had a no. of different experiences.

306. LAWRENCE, Shari. An application of simulation techniques to planning problems at a recreational lake. M.S. in Recreation and Parks, 1975, 200 p. (M. L. Christiansen) Based on a study of the nature and extent of boat use in terms of the population and congestion of various areas of a rec lake, a simulation model was developed. Variables such as the waiting times to launch or dock and the no. of boats in each area of the lake were considered. In order to demonstrate the use of such a model by the rec planner in determining a set of alternative offerings of rec activities, several changes are made to the basic situation, including changes in the no. of docks and types of boats and denial of access to certain areas of the lake. Such a technique allows both planning and management decisions to be made before resources are permanently committed. The implications of such an approach in terms of environmental, physical, and psychological carrying capacity were discussed.

307. LEVY, Judith P. The effects of a dance-movement experience on the body image of campers with mobility problems. M.S. in Recreation and Parks, 1976, 104p. (H. M. Lundegren) 12 campers with mobility problems (10 cerebral palsied, 1 brain damaged with incoordination, and 1 muscular dystrophy), ages 8 to 17 and of average intelligence were tested for body image (55 item adapted body image and movement Q-sort) on a pre and posttest basis. The exp group (N=8) was exposed to 11, 30 min dance-movement sessions. The control (N=4) received 11, 30 min sedentary games sessions. No significant (.05 level) differences in body image were found between the exp and control groups at the beginning of the study nor after the dance-movement experience. No significant (.05 level) differences were found between the pre and posttest body image scores of either the exp or control groups. It was concluded that participation in a dance-movement experience suitable for individuals with mobility difficulties (by drawing attention to one's functional limitations with regard to movement) does not improve one's body image. Body image and movement scores (a real-ideal

r) were relatively low for all Ss which may lend some support to the theory that physically disabled persons have poor body images. When suitably programmed, Dance served as a viable medium in which to work with the study population.

308. LIGHT, Stephen S. Development of an instrument and measurement of attitudes toward the provision of local government park and recreation services. M.S. in Recreation and Parks, 1976, 218 p. (M. L. Christiansen)
An instrument to measure attitudes toward the provision of municipal leisure services was developed. A subproblem was to measure the attitudes of 7 reference groups from PA regarding the provision of municipal leisure services. Reference groups included local elected officials, community rec providers, and community interest groups. It was hypothesized that the instrument developed would identify independent policy position areas and differentiate attitudinal responses by reference group. Development of the instrument involved the construction of a conceptual model consisting of primary roles and correlates concerning the municipal provision of leisure services. The instrument was mailed to 7 reference groups from PA. The questionnaires' results were analyzed; the instrument was revised and readministered to an accidental sample. The analysis of attitudes included differences by attitude dimension and reference group. The results identified 6 policy position areas including provision of public land and water resources for rec purposes, rec leadership and programming by schools, community rec services provided by government versus non-government, local government cooperation with commercial rec, role of volunteer leadership in provision of community rec services, and utilization of fees and charges in municipal provision of leisure services.

309. LIVERATTI, John A. The effects of a camping experience on anxiety and depression levels of urban senior citizens. M.S. in Recreation and Parks, 1976, 75 p. (H. Lundegren)
57 Ss completed 1 General form and 3 Today forms of the Multiple Affect Adjective Check List (MAACL) and a personal background data sheet during a 1 wk time period in a camp environment for the purpose of determining what effects the experience would have on their anxiety and depression levels. The control group (N=9) completed 1 General form and only 2 Today forms. Exp Ss were divided into 3 sub-groups: active, interactive, and passive. Comparisons were made between groups, within groups, among sub-exp groups, and of the relationship between General and Today MAACL scores. Statistically significant findings were: The exp Ss' anxiety scores, which were significantly lower than the control Ss, showed a significant decrease over the 1 wk period. Exp depression, which was also significantly

lower than the control Ss, did not show any significant change over the same time period. There were no differences found among scores of the sub-exp groups. There was a significant r between the control Ss' anxiety scores for both forms of the MAACL.

310. MACHINSKI, Kathryn B. Early adolescent female attitudes toward physical education over a year's time. M.S. in Physical Education, 1975, 85 p. (D. V. Harris)
Attitudes of girls enrolled in the general PE curriculum of 5th (N=145), 6th (N=190) and 7th (N=205) grades in May, 1974, and 6th (N=167), 7th (N= 209) and 8th (N=184) grades in May, 1975, of the Hollidaysburg Area School Dist., Hollidaysburg, PA, were assessed by a 30 statement Likert-type attitude inventory developed for this study. The hypothesis that attitudes of 5th, 6th, 7th, and 8th grade girls toward PE differ was tested at the .05 level by a Kruskal-Wallis ANOVA and was rejected. Using the Wilcoxon Matched-pairs Signed-rank Test, the hypothesis that the attitudes of 5th, 6th, and 7th grade girls toward PE become less favorable over a yr's time was accepted at the .05 level, but only for the 6th and 7th grade groups. With the same test, it was found that a change of school does not affect girls' attitudes toward PE, and that PE instructors do have some influence on early adolescent female attitudes toward PE. It was also concluded that the inventory designed for the study is a valid and reliable instrument to assess attitudes toward PE of girls in 5th through 8th grades.

311. MANFREDO, Michael J. Rural-urban differences with the dissatisfactions of a small game hunting experience. M. S. in Recreation and Parks, 1976, 160 p. (B. van der Smissen)
To obtain rural-urban extremes, 700 Ss (42% response) were chosen randomly from PA Game Commission records of licensed adult hunters residing in Bedford and Philadelphia Counties, PA. A mail questionnaire elicited information on the dissatisfactions of a small game hunting experience. Rural hunters were sensitive to dissatisfactions of a hunt associated with companionship. Urban hunters were more dissatisfied with access, aesthetics, game dependent conditions, and safety conditions of a small game hunt. Both rural and urban hunters were found to have high dissatisfactions associated with derogatory hunter behavior, game dependent conditions, and harvest conditions, while low dissatisfactions were found with crowding and stamina problems.

312. MASTRO, Roberta A. Perceptions of self and old age of senior citizens involved in age-segregated and age-integrated recreation programs. M.S. in Recreation and Parks, 1976, 89 p. (H. M. Lundegren)

97 Ss completed 2 forms of a revised LaForge-Suczek Interpersonal Check List, a revised Tuckman-Lorge Questionnaire, and a background questionnaire in order to determine if there was a difference in attitudes toward self and "most older people" between sr citizens in age-segregated (AS) rec programs and those in age-integrated (AI) programs. Comparisons were made between the 2 groups and 4 selected sub-groups: i.e., males and females within each group, females from both groups, and males from both groups. Statistically significant findings were: AS Ss were more positive in attitudes toward others than AI Ss with AS males' attitudes being the most positive and AI males' the least positive. AI females held more positive self perceptions than AS females; however, no significant difference was found between the total AS and AI Ss perceptions of self. AI Ss' perception of self was more positive than their perception of others. There was no significant difference between AS Ss' perception of self and of others except in the case of the males, where perceptions of others were more positive than self perceptions.

313. MC CORD, James A. A cinematographic analysis of the football kickoff. M.Ed. in Physical Education, 1975, 48 p. (C. A. Morehouse)

Movement patterns involved in the conventional style kickoff were quantified in order to determine the more important aspects associated with successful kicks. High speed film was used to measure approach, distance of the non-kicking foot from the ball, position of the toe at contact, action of the thigh and shank of the kicking leg, and velocity, angle and rotation of the kicked ball. Better and poorer kicks of 4 experienced varsity kickers were analyzed. It was concluded that the success of a kickoff was dependent upon a no. of variables all of which had to be integrated properly in order to attain success. The critical aspects for a kickoff were the final swing of the shank of the kicking leg and the proper contact of the ball by the toe.

314. MC CULLOUGH, Charles V. An examination of locus of control, achievement need and selected personality variables among eustress seekers. M.S. in Physical Education, 1976, 92 p. (D. V. Harris)

An exp group, composed of sport parachutists and mountaineers (N=43), and a control group (N=40) were tested using The Adjective Check List, Rotters' Internal-External Scale, and a sports activity questionnaire. The hypotheses stated that confirmed eustress seekers would exhibit greater levels of achievement need, dominance need, exhibition need, self-confidence, and internal locus of control. Age and socioeconomic data were also examined. Statistical methods employed were the independent t test, X^2, and r. Findings were that eustress seekers demonstrated significantly greater levels of achievement, dominance, exhibition, and autonomy needs when compared to the control Ss, and were also significantly higher on internal locus of control and self-confidence than the control Ss. There was no demonstrated relationship between the achievement need and locus of control variables within the eustress seeking group although there was a slight correlation within the control group. Sport selection data indicated that socioeconomic bias was not a factor within the study.

315. MC DONALD, Regina M. A job study of lifeguards working in third class cities of Pennsylvania and a training program based on that study. M.Ed. in Recreation and Parks, 1976, 147 p. (T. A. Mobley)

An investigator constructed questionnaire was sent to Third Class Cities of PA (N=48) and was used to gather data concerning qualifications, duties and responsibilities, and training of lifeguards and head guards. 77% returned the questionnaire. After examining returns, 2 lists of duties and responsibilities were composed. 1 list consisted of those duties and responsibilities most frequently circled relating to lifeguards, and the 2nd was composed of duties and responsibilities of head guards. The Training Program consisted of the following steps: Job description, selection procedures, training methods, administration of training, reviewing the effectiveness of training, and designing a training handbook. The Training Program was organized and placed into a Training Manual. Although results showed that a majority of Ss (76%) conducted a training program, the construction of a training program was still undertaken based on the results of the Job Study.

316. MC DONNELL, John T. Effect of group-centered and leader-centered leadership on the participation and social interaction of hospitalized chronic schizophrenics in a recreation program. M.S. in Recreation and Parks, 1976, 141 p. (H. M. Lundegren)

Hospitalized chronic schizophrenic patients (N=14) were divided into 2 equal groups each with 4 males and 3 females. Ss in leader-centered group under the direction of a specified leader followed an outlined rec activities program which included such games as color dominoes, dominoes, checkers, pick-up sticks, and 500 rummy. Ss in group-centered group with no designated leader were allowed to arrive at a group decision concerning all phases of group meeting and activities program. An account of participation and social interaction was made by a nonparticipant observer. A Data Sheet consisting of scales for level of participation, range of social interaction and level of social interaction was used to collect data. Data were treated by the Wilcoxon signed rank tests for within group comparisons and the Mann-Whitney U test for between group comparisons. $\bar{X}$ weekly group profiles were computed for participation and social interaction data. Findings: the group-centered leadership style was found to be superior in increasing social interaction. Concerning the level of participation, the leader-centered leadership style was found to be superior.

317. MC GUIRE, Elaine D. The effect of a camping experience on physically impaired children's self-concepts and attitudes toward other similarly impaired children. M.S. in Recreation and Parks, 1976, 104 p. (H. M. Lundegren)
The Piers-Harris Self-Concept Scale was used to investigate the effect of a 2 wk camping experience on moderately physically impaired children's real selves, ideal selves, and attitudes toward other physically impaired children. 22 Ss (11 boys, 11 girls), 8-16 yrs old, with moderate physical impairment, were tested at camp at the onset and conclusion of the camping experience. Each S was asked to respond to 80 statements: as he perceived himself, as he would like to be, and as he perceived other physically impaired children. In comparing pretest and posttest scores for each perception variable, no significant difference was found. At the conclusion of the camping experience, posttest scores showed there was no significant difference between camper subgroups with respect to each variable. In comparing the pretest scores and posttest scores between the 3 perception variables, a significant difference was found between the real self and attitudes toward other physically impaired children (not found on pretest), between real self and ideal self, and between the ideal self and attitudes toward other physically impaired children.

318. MC GUIRE, Francis A. The identification of recreation types through Q methodology. M.S. in Recreation and Parks, 1976, 114 p. (P. Farrell)
To determine what rec activities a group of sr citizens would cluster into rec types, 106 Ss were asked to do a Q sort on a deck of 72 cards. The name of a rec activity was printed on each card and Ss were asked to order activities from least to most preferred. Data gathered through the Q sort were analyzed using QUANAL, a computer program. This analysis consisted of the following stages: a Pearson product moment correlation was computed between all possible pairs of Ss; the r matrix was evaluated for principle component factors; factors were rotated to a varimax solution; factors were identified as types and each

type was delimited by the comparative weightings of the rec activities for each type. These typal weightings were based on z-scores. The types were submitted to a panel of experts who were asked to give an identifying label to each type to indicate what the panel perceived as the common trait(s) of activities within the type. 5 rec types were identified: passive, homebody type; social, physical type; traveling, easy living type; social, active type; travel, passive type.

319. MC KIRNAN, M. Dan. Skeletal muscle development in the obese Zucker Rat. M.S. in Physical Education, 1976, 81 p. (H. Gahagan)

The chemical composition of skeletal muscles from lean and obese female Zucker rats was examined to determine the effects of obesity during growth on the concurrent development of skeletal muscle. Final body wts for the lean and obese animals were 252.48 ± 9.96 and 466.17 ± 27.34 gms, respectively. Muscle wts and muscle lengths were not significantly different in the lean and obese rats. Semitendinosus muscles from lean and obese rats did not differ significantly in concentrations or total quantities of DNA, RNA, and protein or in Protein/DNA and RNA/DNA ratios. In the semitendinosus muscle, total DNA was .546 ± .041 and .485 ± .034 mg and total protein was 161.05 ± 18.58 and 144.35 ± 13.69 mg in the lean and obese animals, respectively. Bicep femoris muscles from obese rats contained a significantly greater % lipid and a significantly lower % water and % protein than the biceps femoris muscles from lean rats. In the biceps femoris muscle % lipid was 1.99 ± .063 and 4.29 ± .208% and % protein was 24.94 ± .18 and 24.43 ± .138%, respectively. Obese animals ate significantly more food than lean animals, but when food intake was expressed per metabolic body size (g/kg $BW.^{75}$), lean rats ate slightly more. Data suggest that skeletal muscle development is impaired in the female "fatty". This altered chemical development may be attributed to endocrine and metabolic abnormalities and spontaneous inactivity that is characteristic of this genetically obese animal.

320. MC PETERS, Janine E. The effects of different leadership styles on selected behavioral and interpersonal variables of emotionally disturbed adolescents in a camping program. M.S. in Recreation and Parks, 1976, 130 p. (H. Lundegren)

20 institutionalized, emotionally disturbed adolescents 14 to 18 yrs of age were divided into 2 groups participating in a program of 3 weekend camping trips consisting of hiking, canoeing, and fishing. 1 group operated under group-centered leadership with elected peer leaders, democratic decision making, and group discussion. The 2nd group operated under leader-centered leadership style with adult staff members making all decisions and directing activities. The Bovard Scale of

Interpersonal Affect measuring the degree of liking for individuals in the group, and the Wagman Scale, measuring the degree of liking for the group as a whole, were administered to Ss before the camping program and after each of the 3 camping trips. Ss' behavior was assessed before the camping program and after each camping trip by the Devereux Adolescent Behavior Rating Scale. The difference in leadership style did not affect the overall liking of the Ss for the individuals in their group. Ss with group-centered leadership increased significantly in liking for their group as a whole, while Ss with leader-centered leadership did not. Ss' behavior in both groups changed in both positive and negative ways in the camping situation. However, behavior changes in both groups tended to be temporary, with some indication that group-centered leadership tends to lead to somewhat more positive behavior.

321. MINEOR, Carolyn J. The effects of reinforcement on the attitudes of schizophrenic male patients toward recreational activities and on their level of involvement and frequency of participation in these activities. M.S. in Recreation and Parks, 1976, 136 p. (H. M. Lundegren)

5 male schizophrenic patients, 50-57 yrs. of age, participating in a rec program were socially and physically reinforced for 6 wks by the rec worker and a psychiatric aide. The patients were selected to participate in the program because they were institutionalized, had no history of convalescent pass, were sedentary, and had indicated negativism toward participating in rec. Background data regarding rec experiences prior to and during hospitalization were gathered. All Ss selected activities in which they wished to participate. 1 wk prior to and 1 workday after the activity program, Ss completed a rec attitude inventory. The program included sports, music, dramatics, games, and community outings. Ss were observed and rated regarding their levels of involvement. The paired t test between pre and post-attitude scores indicated there was a significant gain beyond the .05 level. Regarding the $\bar{X}$ levels of involvement of the Ss observed, the categorized levels during the baseline were between voluntary observer and encouraged participant, while during the last observation session their ratings increased to between the encouraged and voluntary participant level. Findings: Schizophrenic male patients have more positive attitudes toward activities, higher levels of involvement, and greater frequencies of participation in a reinforced rec program.

322. MONK, Susan V. An investigation of the self and ideal self profiles and the dissonance between them among field hockey players. M.S. in Physical Education, 1976, 94 p. (D. V. Harris)

This study attempted to ascertain if role conflict adversely affected skilled athletes to the degree that they could be differentiated in self concept from less skilled groups. It was hypothesized that there would be differences among the self and ideal self profiles, and in the amount of dissonance between the 2 profiles among groups at various levels of participation in field hockey. Ss were college females, 12 on the varsity team, 15 on the jr varsity team, 19 in a basic instructional field hockey class, and 22 in a control group. Scores were obtained on selected scales of the Gough Adjective Check List for a self profile and an ideal self profile. Results indicated that there were differences among the groups on the self and ideal self profiles. However, groups could not be differentiated on the basis of the amount of dissonance between the self and the ideal self.

323. MORGAN, Ann L. Effect of entering an age-segregated environment upon leisure activity participation of senior adults. M.S. in Recreation and Parks, 1976, 119 p. (G. C. Godbey)

McKechnie's Leisure Activities Blank, assessing the frequency of past and current participation in 120 activities, and a background information questionnaire were administered to 59 men and 110 women at Sacramento Manor, Sacramento, CA. Respondents were at least 55 yrs of age and had maintained residency at the study site for at least 1 yr at the time of administration of the study instruments. To compare past and current activity patterns of the respondents, change, constriction, and expansion quotients were developed by the investigator. From past to current, respondents dropped ($\bar{X} = 7.0$) about 1 more activity than they added ($\bar{X} = 6.2$). The $\bar{X}$ total change in participation was 13.2 activities per respondent. Multiple regression analysis was used to analyze the predictive value of demographic characteristics upon the dependent variables of change, constriction, and expansion in activity participation. Findings: sex, health, and attitude toward leisure had the strongest predictive relationship to expansion. Constriction was most apt to be predicted by current income, health, marital status and occupation. It was concluded that change did occur upon moving to the age-segregated environment and that demographic characteristics did have some predictive value.

324. NISEWONGER, Judith A. A survey of injuries occurring in public outdoor swimming pools. M.Ed. in Physical Education, 1975, 73 p. (L. K. Magnusson)

In the summer of 1974, 51 central PA swimming pool managers completed an injury report for each injury serious enough to cause the victim to leave the pool premises. Data were collected from the injury report and from a personal visit to each pool. Of the participating pools, 28 reported injuries (55%). 51% of the injuries occurred in the month of July; the most likely time of day for an injury was from 3:00 P.M. to 3:59 P.M. The 7-12 yr old group had the greatest % (38%) of injuries. The greatest no. of injuries occurred in the water with the majority occurring from contact with the botton of the pool at the shallow end. 56% of the injuries to body parts occurred to areas of the head. When considering the injuries to all body parts, surface and deep cuts were accountable for 60% of the injuries. The activity which led to the greatest no. of injuries was diving.

325. NORDEEN, Katherine S. The effect of bicycle seat height variation upon oxygen consumption and both experimental and simulated lower limb kinematics. M.S. in Physical Education, 1976, 137 p. (P. R. Cavanagh)

VO_2 was obtained for 10 women bicycling on rollers at 3 saddle hts (SH): 95, 100, and 105% trochanteric ht. Kinematic patterns described by the hip, knee, ankle, and foot were discerned from 1 pedal cycle at each of the 3 SH. Ss cycled on a Fuji D Dynamic 10 10-speed bicycle, at 60 rpm, a workload applied by a tensioning belt from a bicycle ergometer (799 kpm), until they reached steady state. Expired air was then collected and cine films were taken during gas collection. The 100% SH was most efficient; $\bar{X}$ values for 95, 100, and 105% SH were 1.69, 1.61, and 1.74 l/min, respectively. Kinematic patterns showed no variation in the range of motion (ROM) at the hip; values at the dead centers (DC) did not change. The ROM at the knee varied from 60 to 82.9°, 95 to 105% SH; values at the DC varied also. Plantar flexior (PF) at bottom DC increased by 10% from 95 to 105% SH. Foot angle showed no significant variation with increasing SH. The major adaptations to increases in SH were found at the knee and in ankle PF. Simulated and exp values were not in complete agreement, though they were close.

326. OBERMEIER, George E. Coaction, directive cues and 440-yard dash performance. M.S. in Physical Education, 1976, 88 p. (D. M. Landers)

To test Zajonc's social facilitation hypothesis in a field setting, the following study was undertaken. The purposes of this study were to investigate the effects of coaction vs. alone performance of a 440-yd dash and performance variability for each 110 yds of a 440-yd dash of Ss on an inner lane as compared to the variability of the same Ss running on an outer lane. The 14 Ss were male track athletes, ages 14-21, who ran under the assumption that they were establishing norms for the 440-yd dash performance. In obtaining the 110 yd split times, all Ss under all conditions were filmed by a camera with a split lens. Attached to the tripod, mounted in view of half of the split lens, was a continually running stopwatch. Results indicated that, in terms of maximizing performance in running a 440-yd dash, running with coactors is better than running alone, with performance differences being particularly evident on the 2nd and 3rd splits. There was no performance difference between running on the inside lane and running on the outside lane. Results for coactors were supportive of Zajonc's social facilitation hypothesis.

327. O'BRIEN, Patricia A. The effects of a swimming program on the isometric strength and flexibility of mildly spastic cerebral palsied children. M.S. in Recreation and Parks, 1975, 107 p., (H. M. Lundegren)

2 spastic cerebral palsied girls, ages 9 and 12, participated in an 8 wk swimming program for 1/2 hr, 5 days/wk. Isometric strength and flexibility of the hip were measured during flexion and extension using a cable tensiometer and a universal goniometer, respectively. A sub-problem was studied concerning effects of the swimming program on Ss' swimming achievement. Measurements were taken on the 3rd and 5th days of each wk and a log of Ss' swimming achievement was recorded weekly. A 2 tailed independent t test was used as supportive analysis. It was concluded that participation in a swimming program does not tend to increase the isometric strength of hip flexor muscles of cerebral palsied children but does tend to increase isometric strength of hip extensor muscles. Participation in a swimming program also tends to increase flexibility of the hip joint during both flexion and extension. Both Ss' swimming achievement improved.

328. OLMES, Philip D. A study of country club members' attitudes toward public recreation. M.S. in Recreation and Parks, 1975, 124 p. (T. A. Mobley)

Attitudes of people holding membership in country clubs toward public rec and their participation in public rec and in their private club were surveyed. A self-administered questionniare was sent to 450 club members from 3 eastern PA country clubs. Ss were asked to complete and return the form to the investigator. A Likert Scale analysis was used to analyze the data. The member responding most often was a middle-aged, married male, with at least some college education and no or few children. This group's attitudes were generally neutral or positive toward public rec; however, their participation was much greater in private clubs than publicly sponsored rec programs.

329. PLIMPTON, Carol E. A perceptual-motor curriculum for primary grade children with learning disabilities. M.Ed. in Physical Education, 1975, 91 p. (H. M. Lundegren)
A curriculum was developed for a program based on specific facilities and equipment available in the Lake Placid, NY, school district. The review of literature provides insight into theories of perceptual-motor development, necessary content areas, and remediation methods as derived from research of experts in the field. Curriculum content includes objectives for each area, screening and evaluation methods, and step-by-step sequences for remediation in each phase of the program. The curriculum was formulated through a combination of skill activities as proposed by various experts as well as the writer's own concepts.

330. POMEROY, Barbara N. The effects of verbal pre-training, verbal/modeling, and modeling, on the rate of learning a four part motor task sequence by educable mentally retarded children. M.S. in Physical Education, 1975, 62 p., (H. M. Lundegren)
31 EMR children, ages 6-10 yrs, were randomly assigned to 3 exp groups. The modeling group learned the motor sequence by observing a model demonstration. The verbal/model group also learned the motor sequence by observing a model demonstration, and in addition the investigator was concurrently reciting the equivalent verbal cues sequence. The verbal pre-training group first learned the equivalent verbal cue sequence and then learned the motor sequence following the same procedure as the verbal/model group. The Mann-Whitney U test revealed a significant difference in the no. of trials necessary to learn motor sequence between the verbal pre-training and modeling groups, and between the verbal/modeling and modeling groups. No significant difference was found between the verbal pre-training and verbal/modeling groups. The Spearman rank r coefficient revealed no significant r between the no. of trials necessary to learn the verbal sequence and the no. of trials necessary to learn the motor sequence in the verbal pretraining group.

331. RATTRAY, Gillian D. The relationship among personal distance, anxiety, and fencing strategy in beginning fencers. M.S. in Physical Education, 1975, 75 p. (H. M. Lundegren)
Using the State-Trait Anxiety Inventory, a method of limits procedure, and advancing and retreating frequency on the fencing strip, 49 co-ed students, enrolled in 2 beginning fencing

classes, were tested for anxiety levels and interpersonal distance preference in both a social and a sporting situation. Results indicated low positive rs between state and trait anxiety for the total group, and for the high advancers, and high positive r for the close personal distance preference group. No significant differences were found to exist when the following data were compared: $state_1$ and $state_2$ anxiety for the total group, $state_1$ anxiety and distance preference groups, and trait anxiety and distance preference groups. No r was found between the 2 interpersonal distance situations.

332. REEVE, Elva J. The effect of the Dayton Sensorimotor Training Activities Program on the balance of children in a developmental kindergarten. M.S. in Physical Education, 1976, 104 p. (H. M. Lundegren)

A special PE balance program to improve the balance ability of 4-5 yr old children considered to be slow learners was investigated. 35 Ss participated in an 8 wk PE program: the 18 Ss in the exp group received the special balance PE program in addition to regular PE activities; 17 Ss received only a regular PE curriculum. Daily instruction was held in small groups for 15-20 min/session. Each S was individually pretested and posttested using Cratty's Level I and Level II static balance test and Roach and Kephart's dynamic balance test. Pretest and posttest comparisons were made between the 2 groups and within each group for total balance, static balance, and dynamic balance scores using the Mann Whitney U test and the Wilcoxon signed rank test. Statistically significant findings at the .05 level of probability were: groups were different when posttested with the exp group's scores higher than the scores for the control group; both groups improved in total balance and dynamic balance ability, but only the exp Ss improved in static balance ability.

333. REID, J. Gavin. Effects of constant and intermittent forces on range of joint motion. Ph.D. in Physical Education, 1975, 80 p. (R. C. Nelson)

The effects of the application of constant and intermittent forces designed to increase range of joint motion at the knee were investigated. Mechanical forces of specific intensity were applied to the legs of 25 male Ss in each group. Both forces were applied for 10 min, during which time 5 2-min recordings were obtained to determine differences in the degree of angle change and trends in rate of change for both types of force. EMG responses of the knee flexor musculature were observed during constant and intermittent (0.5Hz) application of the standardized torque (15.98Nm). EMG activity was also observed at 0.25Hz, 0.5Hz, and 1.0Hz (N=10). Within-day and between-day r's were 0.99 and 0.97, respectively. It was concluded that little or no neuromuscular activity was present during force application which resulted in increased range of joint motion at the knee. The intermittently applied force developed a greater increase in range of joint motion than the constantly applied force (F=6.55). Although the intermittent force resulted in a greater rate of increase than the constant force during the first 2 min, the rate of change over time thereafter was similar.

334. REIKEN, Gail B. A biomechanical analysis of the aerial cartwheel. M.S. in Physical education, 1975, 54 p. (R. C. Nelson)

17 women gymnasts from the State College, PA area ranging in age from 15-24 yrs, were filmed twice performing an aerial cartwheel preceded by a hurdle step. Selected mechanical factors were compared to the performance scores. Videotaped performances were evaluated by 3 gymnastic judges on the criteria of execution, amplitude, lightness, and rhythm; an average score was obtained for each trial. A Vanguard Motion Analyzer was used to obtain x and y coordinates from the film. A computer program was implemented to calculate various values of time, distance, angles and velocity from the data collected from the film. Most measurements were taken during the takeoff phase of the aerial cartwheels. Xs, SD, and coefficients of variability were calculated. The r between the values obtained and the score awarded each aerial cartwheel were computed. Successful aerial cartwheels were characterized by a long preliminary step, a marked amount of flexion in the pushoff knee, and a high velocity of extension of the pushing leg and the midhip being horizontally proximal to the pushoff ankle at takeoff.

335. RILEY, Robert. The relationship between participation level and certain demographic and social characteristics of senior citizens engaged in a sponsored recreation program. M.S. in Recreation and Parks, 1976, 150 p. (H. M. Lundegren)

260 sr Ss completed a modified Leisure Activities Blank (LAB) and a demographic questionnaire to identify and compare past and present leisure participation patterns with selected demographic and social characteristics. The LAB consisted of 2 sections: past participation (TOTALFP) and present participation (TOTALFF), with 120 leisure activities listed in each section. A multi-dimensional activity scale was contained in each section. Predictive analysis was conducted between 8 demographic variables (including TOTALFP) and TOTALFF. In addition, predictive analysis was expanded to include the multi-dimensional scale of the TOTALFF. Statistically significant findings were: the demographic variables of sex, age, occupation, income, length of time married, and TOTALFP were all found to be

significant predictors of TOTALFF. Upon expanding the partial regression analysis to include the multi-dimensional scale of the LAB, significant beta values were found to exist between some of the demographic variables and dimensions of the dependent variable, TOTALFF. Sex was significantly related to 6 of the LAB dimensions, while income and education were both related to 4 dimensions. Of the remaining variables, age, length of time married, and no. of children all were related to less than 4 dimensions each. TOTALFP was significantly related to all 9 dimensions of the LAB. The range for the total amount of variance explained by each of the LAB dimensions was R^2=16% to R^2=68%. 8 of the 9 dimensions had R^2 values of 35% or more.

336. ROUSH, Jeffery A. Flood plain parks: legal bases and a survey of development in the communities bordering Pennsylvania's Susquehanna River. M.S. in Recreation and Parks, 1975, 205 p. (B. van der Smissen)

Substantive assistance areas investigated within the applicable federal, state (cross-section) and PA laws and agencies were technical, financial loan and grant, disaster, planning and facility construction. Relevant court cases were reviewed to ascertain the constitutional limitations of local flood plan regulations. 4 land use control methods (zoning, subdivision regulation, easements, tax adjustment) were reviewed with emphasis on their effect to preserve open flood plain lands. Mail questionnaires were sent to supervisors, mayors, managers, planners and solicitors representing local government units bordering the river to determine local government's utilization of the flood plain for park purposes. Units actively considering, had plans or had established parks on their flood plains were administered an interview schedule for more detailed information on flood plain use.

337. SCHULZE, Gregory J. Estimates of energy expenditures of intercollegiate football officials. M.S. in Physical Education, 1975, 108 p. (C. A. Morehouse)

A methodology was developed whereby movement profiles for each of 5 football officials were determined from special game films. With these data, estimates of energy expenditures were made and differences in the physiological requirements of the 5 officials' positions were determined. A detailed analysis of 1 game was completed to determine if the techniques developed for this investigation were feasible. Results indicated that officials worked at a moderate level. Rank order of the energy expenditures was linesman, back judge, referee, field judge and umpire, respectively. On some occasions energy was expended at very rapid rates, while at other times the rates of energy expenditure were quite low. Over 50% of the time during the game, officials were standing or waiting for the next play to begin. Finally, the relationship between energy expenditure and workload intensity was utilized to develop an abbreviated procedure that might be utilized in future investigations for estimating officials' total energy expenditures.

338. SESAY, Samuel L. The historical development of physical education in Sierra Leone to 1975. M.S. in Physical Education, 1976, 95 p. (J. D. Gallagher)

The Republic of Sierra Leone is emerging as a leader among African states in education and athletics. Freetown, the capital, was founded in 1787 for Liberated Africans who had fought in the Caribbean wars and on the side of the British during the American Revolution. The principal indigenous tribes, the Temnes and Mendes, educated both sexes in secret societies—the Poro for the men and the Bundo for the girls. Athletics and skilled trades were taught in preparation for responsible adult life. Prior to 1933, PE in the schools consisted largely of calisthenics and informal games. Instruction in manual labor for boys and folk dancing for girls had some similarity to that found in the Poro. A national Syllabus for PE used in the British Empire since 1933 gave rise to an organized system of instruction in Sierra Leone. Since WWII, experts have been trained in Europe and the U.S. Colleges now offer courses in PE leading to advanced teacher's certification. Extramurals are held in a variety of athletics. Sierra Leone has participated in the British Empire, Commonwealth Games, and other games, including the Olympics. Improved financial support from the government and active promotion of PE and athletics by the Ministries of Education and Social Welfare represent recent trends.

339. SHAFFER, Robert J. Walter Camp, brutality, and mass momentum plays in college football: 1874-1906. M.S. in Physical Education, 1976, 106 p. (R. A. Smith)

Walter Camp, the father of American football, did much to develop the game of football into a rough, well-organized, commercialized, and at times, brutal spectacle. Camp, Yale's head coach and graduate treasurer, organized football by forming a coaching staff where it could influence the outcome of a contest and helped found the Yale Financial Union to keep records of the money earned and spent. Yet, Camp's greatest influence on the game was in rule making. Through his leadership on the Football Rules Committee, the game of American football developed from the already defined rules of soccer and rugby. However, the lack of foresight in rule making accompanied with the growing American desire to win at all costs caused football to go into its most trying period early in the game's development. When the low tackle was legalized in 1888, the game became one of mass formations. Soon momentum was added to the mass formations which resulted in rougher and more brutal play. Camp fought against the legalization of the forward pass because he enjoyed the rough encounters of football. Thus, because of Camp's personal preference, football retained brutal live play for yrs and delayed the development of the wide-open passing attack of today's contests.

340. SHANK, John W. The effects of a modified Outward Bound program on the self concept of emotionally disturbed adolescent patients. M.S. in Recreation and Parks, 1975, 187 p. (H. M. Lundgren)

12 hospitalized emotionally disturbed adolescents, 14-20 yrs, were randomly assigned to an exp or a control group. The exp group engaged in a modified Outward Bound program for 3 wks. In addition, the ward behavior of 2 exp Ss was evaluated by the ward administrator, nursing supervisor, and coordinator of each case-study S during the study period by using an investigator developed behavior rating scale. The Tennessee Self Concept Scale (TSCS) was administered to all study Ss 1 day before the program, the last day of the program, and 2 wks after the program. Profile interpretation of the TSCS revealed an overall increase in positive self concept for the exp group from pretest to follow-up test. The control group decreased in total positive scores across the 3 testing periods, and in each subscore of positive self. The control group continued to reveal high degrees of maladjustment, personality disorder and neurosis, whereas the exp group decreased in their indication of these pathological traits each time the TSCS was administered. The Mann-Whitney U test revealed no significant difference between groups on the 3 most salient TSCS scores—total positive, total variability and self criticism. The Kruskal-Wallis ANOVA by Ranks revealed no significant change within groups for these same salient scores. The 2 case-study Ss showed some personal and interpersonal change on their ward but these changes were sporadic. The exp Ss indicated positive changes in self confidence and interpersonal interaction. It was concluded that participation in a modified Outward Bound program effects a positive increase in self concept. However, participation in this program does not influence enduring positive behavioral changes on the wards of participating patients.

341. SIEGENTHALER, Robert. An evaluative tool for recreation center site selection. M.Ed. in Recreation and Parks, 1976, 91 p. (P. Farrell)

A systematic method useful in decision making concerning new rec center site selections was formulated and tested. The method used information concerning patterns of visitation, population density, school age and sr adult populations to develop indices measuring the condition of each of these 4 factors within each census tract (CT) of a given study area. A combined index was developed for each CT which ranked each CT within the study area according to need for a new rec center. Using the combined indices, all CTs within the study area were identified as either high, intermediate, or low priority CTs. The existing rec center was identified and its service range established. Potential sites within the study area were identified and evaluated according to desirability standards. Theoretical service ranges were established for each potential site selected. Each site was rated to determine which one would best service the study area. Information concerning priority areas, potential sites and their service ranges, and visitation data was displayed on a CT map of the study area. The method was tested in Altoona, PA, and of the 23 potential sites identified and evaluated, 1 site was identified as the most desirable for a new rec center.

342. SMITH, John H. The effects of a weight training program on body image and the development of muscular strength in institutionalized mentally retarded males. M.S. in Recreation and Parks, 1976, 89 p. (H. M. Lundegren)
18 institutionalized mentally retarded males, 15-19 yrs, IQ 28-57, were divided into 2 equal groups. The exp group trained under the investigator's guidance for 8 wks, 2 sessions/wk, using progressive resistance techniques. The control group did not engage in any wt training activities but participated in the institution's regular rec program. The IRM bench press was used to evaluate strength, while the Picture Body Image Test for Mentally Retarded Males was used to assess body image. Tests were administered to all Ss before training began, 4 wks after the training period started, and at the termination of the program. The exp group experienced significant strength gains during the program and there was a significant difference in strength development between the 2 groups. Results also indicated that more positive body images existed at the end of the study for the exp group, but generally speaking, all Ss had positive body images.

343. SOLAN, David S. Soil characteristics and vegetative response in concentrated recreational use areas of three parks in Pennsylvania. M.S. in Recreation and Parks, 1976, 135 p. (M. L. Christiansen)
Tenth acre plots were established in concentrated rec use areas and control areas in the parks. Tree plots were established within the tenth acre plots to delineate sampling areas for the extraction of soil samples and placement of instrumentation needed for the measurement of selected soil physical and chemical properties. The entire tenth acre plots were used for the measurement of overstory and understory vegetation and for

analysis of ground cover conditions. Results indicated that soil physical properties were adversely affected by concentrated rec use. Correlations showed that increased bulk density of the soil in use areas was associated with adverse effects upon related soil physical properties. In general, concentrated use exerted little influence on soil chemical properties. 2 soil chemical properties, cation exchange capacity and phosphorus levels, were adversely affected by concentrated rec use. The growth of the overstory and understory vegetation was not significantly affected by concentrated use. However, an adverse trend in radial growth did exist in the concentrated use areas. The use areas were maintaining lower %s of ground cover vegetation as compared to the control areas. Bare soil conditions covered a majority of the concentrated use areas.

344. SPEECE, Marjorie E. *The effects of an art activities program on the participation, social interaction, and behavioral patterns of insitutionalized asocial psychiatric aged*. M.Ed. in Recreation and Parks, 1976, 249 p. (H. M. Lundegren)

12 institutionalized asocial geriatric mental patients, ages 59-83 yrs, with communication difficulties were divided into 2 equal groups (3 men and 3 women in each group). Both groups attended 3 sessions/wk for 6 wks. The exp group attended an art activity program in which they were given a nonverbal means of expression through arts and crafts to express what they knew and wanted to say. The control group participated in discussions only, to test for the Hawthorne effect. All *Ss* were evaluated by the leader after each session and by 4 staff members before the program, after, and 3 mo later. Results showed that participation in an art activity program resulted in a positive gain in participation, a higher level of social interaction and positive gain in behavioral patterns and had a carryover effect from the art activity program to the ward environment. The Art Activity Group showed greater and more consistent improvement with less fluctuation and more consistent generalization of behavior patterns to the wards than the Discussion Group.

345. STREATOR, Charlotte L. *The effect of a supplementary program on the development of perceptual-motor skills in children*. M.Ed. in Physical Education, 1976, 112 p. (H. M. Lundegren)

21 kindergarten boys and girls were randomly assigned to 3 groups: perceptual-motor (P-M) training by child's mother, P-M training by woman volunteer, and control. All groups participated in a group PE program with the experimenter. *Ss* in the 2 exp groups were trained for 20 min/day, 5 days/wk for 6 wks. *Ss* in the control group spent like amounts of time in supervised

play. Ss were pre- and posttested with the Purdue Perceptual-Motor Survey. Results indicated that kindergarten children who participate in a supplementary P-M program do not differ from non-participants in the skills of the Purdue Test. Participation in the 2 exp programs did yield statistically significant gains in P-M skills not found in the control group.

346. STROBERT, Donald D. The effects of ice skating on the balance of trainable mentally retarded children. M.S. in Physical Education, 1975, 49 p. (H. M. Lundegren)
12 TMR children participated in an instructional and rec ice skating program once a wk for 14 wks to determine the effects of ice skating on static and dynamic balance performance of retardates. Static balance was tested with a Modified Balance Stick Test. Dynamic balance was tested with a Modified Stepping Stone Test and a Dual Beam Walking Test. The Dual Beam Walking Test was developed by the investigator to simulate the techniques involved in ice skating. Ss met each Saturday for a 1 hr session and were equated with a control group (N=14) that received no ice skating program. Posttest results indicated that ice skating did not significantly affect the developmental balance skills of TMR children. Results suggest that possibly the program was not sufficient in amount and frequency of practice to alter the balance skills. Further studies, using different patterns of frequency of practice with more emphasis on instruction, are recommended. A sub-problem of this study was to establish reliability coefficients for the Modified Balance Stick Test, the Modified Stepping Stone Test, and the Dual Beam Walking Test with TMR children. Coefficients were .95, .94, and .91 respectively.

347. TEDRICK, Raymond E. The influence of the Foster Grandparent and Retired Senior Volunteer Programs as perceived by older participants. M.S. in Recreation and Parks, 1975, 149 p. (T. A. Mobley)
37 Foster Grandparents and 34 Retired Sr Volunteers serving at 6 sites in the Philadelphia area were sampled to determine how they viewed possible benefits of their service and if differences existed between the 2 groups relative to importance given to various benefits. To measure influence, 43 statements about their programs were included in an instrument; respondents completed each statement by placing a check on a 7-point scale indicating positive or negative influence. Both groups perceived the influence of their programs to be positive, although certain categories of benefits were viewed more positively by 1 group than the other. Both groups viewed the benefits associated with their relationships with children, performing a useful service and having an important role, and being satisfied and happy as being more important than other benefit categories.

348. TIBI, Jean-Pierre. A biomechanical analysis of the volleyball pass. M.S. in Physical Education, 1976, 59 p. (R. C. Nelson)
Cinematography was used to study the effect of player ability and different passing conditions on the execution of the volleyball pass. 30 Ss were selected and classified in 3 groups: low, medium, and highly skilled. 3 passes for each condition were analyzed for each S. Parameters measured to characterize the volleyball pass included: ball-eye distance and lower leg angles at contact, time and distance of contact, and lower leg angles at release. $\bar{X}$ and SDs were computed for all groups under each testing condition and a 2-way ANOVA was used to test for interaction of the 2 exp variables and to determine the effects of ability and test conditions on the Ss' performance. Individual group Xs were compared using Tukey's w-procedure. The passing technique of highly skilled volleyball players was characterized by: greater knee flexion and less distance between ball and face at ball contact and greater distances and times for the absorption and acceleration phases during ball contact. Regardless of ability, volleyball players did not modify their passing technique when redirecting the ball 45° to their right as opposed to returning the ball along the incoming path.

349. UDSTUEN, Joel A. Mechanical harvest of aquatic plants in two small recreational lakes. M.S. in Recreation and Parks, 1975, 87 p. (B. van der Smissen)
Beds of aquatic plants (primarily milfoil, elodea) were harvested in 4 test plots located offshore in open water and in coves in Central PA by the Loomis Aquatic Plant Harvester, a specially designed machine for both cutting and transporting aquatic weeks. Weeds were cut 6-12" from the bottom of the lake where the water depth was not greater than 6' and 5'6" below the water surface in deeper water. Harvest efficiency rates in terms of lbs/hr and acres/hr for cutting and removing plants were determined for each plot and by species. Preliminary feasibility investigations for use of harvested plant material as a mulch and soil supplement were conducted. Freshly harvested elodea, milfoil, and najas, when piled to a 3" depth, forms a usable mulch for planting grass seed. Dried and decomposed elodea, milfoil, and najas is a usable soil supplement.

350. VIGNONE, John A. The development of Basque pelota into the North American version of jai-alai. M.Ed. in Physical Education, 1976, 49 p. (K. G. Stoedefalke)
The development of Basque pelota into the North American game of jai-alai is traced. Pelota was unique to the Basque culture until the 20th century; their style of play is still the foundation for modern jai-alai. The game evolved from a simple

handball type of game to a more sophisticated game involving a ball thrown against a wall (by means of a chistera, or basket), sometimes reaching a speed of 150 mph. Jai-alai reached the US via Cuba at the turn of the 20th century and in the past 75 yrs was played mostly in FL. Today, it is played in FL, NV, RI, and CT and has prospered mainly due to the gambling aspect of the game. The future of the game in the US is difficult to predict, but the successful expansion of jai-alai in the 1970s leads one to believe that the game will prosper.

351. VOIGT, James W. Evaluation of mechanical harvesting and herbicide treatment as aquatic weed control practices in the Stone Valley Recreation Area Lake. M.S. in Recreation and Parks, 1975, 90 p. (B. van der Smissen)
2 methods of aquatic weed control; 2, 4-D applied at a rate of 40 lbs active/surface acre in June, 1973, and a mechanical harvest, initiated in July, 1973, were evaluated to determine their effectiveness for reducing and controlling M. Spicatum in the lake up to 1 yr following treatment. Evaluation was based on collection of biomass samples from a standardized sampling plot within each treatment area. Samples were collected montly from June through Sept, 1973 and again in June, 1974 by a SCUBA diver who cut and collected all plants growing within a square m frame lowered at selected locations. The samples were rinsed and oven dried to obtain the dry wt. 1973 sampling data were converted to express the % change of biomass from the initial June sample, and were also analyzed by a 1-way ANOVA and LSD tests to determine when significant changes occurred. A t test was used to compare the June, 1973 and 1974 samples. Results indicated that 2, 4-D reduced the biomass within 1 mo by 100% and no regrowth occurred up to 1 yr following treatment. Mechanical harvesting provided some relief of nuisance conditions, but accurate assessment for the effectiveness of this treatment was not possible as an unexpected decline in the biomass, beginning prior to harvesting, was confounded with the reduction produced by the treatment.

352. WALSH, James G. The effect of acute dehydration upon the blood pressure response to sustained hand grip contractions performed independently and during rhythmic exercise. M.S. in Physical Education, 1975, 67 p. (J. Hodgson, E. Buskirk)
The effect of acute dehydration upon blood pressure (BP) response to sustained hand grip contractions (static exercise) performed independently and during walking (rhythmic exercise) was determined. 12 nonvarsity wrestlers (18-21 yrs of age) with "making-wt" experience volunteered to participate in the study. 1 was excluded for medical reasons. 3 others were excluded when they failed to dehydrate the minimum amount of 3.5% of

their initial body wt. The remaining 8 Ss were tested using a pre-dehydration post-dehydration exp design. Volunteers dehydrated themselves from 3.5 to 5.8% of their initial body wt through exercise and curtailment of evaporative cooling, by wearing heavy clothing and/or rubber suits, for a period of 3-6 hrs. Systolic BP was significantly ($p < .05$) reduced at standing and recumbent rest and during exercise (static, rhythmic and combination) following acute dehydration. Diastolic BP was not significantly different ($p > .05$) at standing rest, or during static or rhythmic exercise following dehydration. HR significantly ($p < .05$) increased during all phases of testing (recumbent rest, standing rest, tilting, static exercise, rhythmic exercise, and combination exercise) following acute dehydration.

353. WEISER, George. The perceptions of pastors regarding values in and operational issues of the camping program of Central Pennsylvania Lutheran Synod. M.Ed. in Recreation and Parks, 1976, 183 p.
(B. van der Smissen)

Perceptions of 150 pastors and 12 Commission on Camping members were investigated. Information was provided to those in decision-making roles, as well as stimulating thought among the pastorate and Commissioners. An instrument was constructed of 101 statements on values, camp organization and operations, property, program, finance, and general considerations based on the concerns of the Commission. Value statements were grouped according to substantive content and analytically compared according to importance and occurrence. Free response listing of the 5 values deemed most important elicited 5 general camping values synthesized by similar thought content. A special considerations instrument section evidenced positive and negative feedback, ideas on the role camps have in satisfying pastoral needs, and future programming considerations. It was concluded that the perceptions of pastors regarding values of a camping program and operational issues involved in administration of such program are definable and can make a contribution toward greater understanding of a major constituent group's opinions toward a specific Synod program.

354. WILT, Sandra L. The effects of specific exercise on dysmenorrhea in obese girls. M.Ed. in Physical Education, 1976, 78 p. (H. M. Lundegren)

31 obese girls (ages 18-25) who experienced dysmenorrhea were divided in 2 groups, 16 in a control group and 15 in an exp group. The exp group performed the modified Golub exercise daily 30 times each while the control group did not engage in any special program except the regular PE class. The criterion for obesity was a triceps measurement of 27mm. Ss were administered a menstrual knowledge test, an attitude questionnaire, and

record sheet. The exp group experienced more flexibility of the stomach muscles coupled with perceiving less menstrual pain after performing the modified Golub for 16 wks. The results indicated more positive attitudes toward menstruation at the end of the study for exp group Ss, while both groups acquired more knowledge of the menstrual cycle.

355. WINKLER, Cynthia L. *Values and attitudes of female intercollegiate athletic coaches in Pennsylvania*. M.S. in Physical Education, 1976, 110 p. (D. V. Harris)

46 Ss' values and attitudes toward issues in women's athletics were surveyed using the Allport-Vernon-Lindzey *Study of Values* and an attitude instrument developed using the Sherif's Method of Ordered Alternatives. Answers to a background questionnaire were used to subdivide Ss in an attempt to find if group norms affected attitudes toward issues. Finally, an investigation was conducted regarding possible r between values and attitudes. On all values, Ss' plurality were in the average category. Ss had no characteristic attitudes about admission fees at women's athletic events, toward athletic scholarships for female athletes, or having male coaches for female teams. However, all Ss were in support of separate competitive programs for women and of coaches retaining some teaching responsibilities. In addition, Ss who had male coaches at their school, who had released time from teaching, and who offered scholarships had characteristic attitudes toward the corresponding issues. The extent of coaching experience, type of sports coached, S's earned degrees, and type of institutions where Ss were employed influenced attitudes on the issues. The attitudes and values measured were not related.

356. WOLF, Michael D. *Eye color, race, and motor reactivity: An investigation of response time components and patellar reflex time*. M.S. in Physical Education, 1976, 95 p. (D. M. Landers)

Underlying explanations for recent evidence linking an organism's eye color to its characteristic motor behaviors were examined. Dark-eyed organisms have been found to excel at quick, reactive behaviors, while light-eyed organisms tend to excel at slow, self-paced behaviors. Ss were students at PSU, chosen from the extreme ranges of eye color and matched on socio-economic status. There were 20 Ss in each of 3 groups: light-eyed white, dark-eyed white, dark-eyed black. Each S performed 20 trials on a knee reflex time apparatus and on an apparatus designed to measure the RT and MT components of simple RT, the response being a maximal speed extension of the forearm. A significant main effect in the direction of dark-eyed superiority was found for eye color on the RT component ($p < .001$) and on TRT ($p < .02$). No differences were present on the MT component of the response or in knee reflex time. It was concluded that the eye color phenomenon in this investigation was limited to the RT component and probably a result of central rather than peripheral nervous system effects.

357. WOOD, Carol J. Attitude change in a five-day environmental experience for urban high school students. M.Ed. in Recreation and Parks, 1976, 126 p. (B. van der Smissen)
80 Philadelphia area SHS students participated in 5 1-wk sessions of the Environmental Experience for Secondary Students at Schuylkill Valley Nature Center in Summer, 1975. A Likert-type attitude scale, administered to all Ss at the program's beginning and end, was developed which contained 3 subscales: attitude toward animals, toward plants, and toward physical factors in the natural environment and camp living. Responses were subjected to Likert Analysis and then to tests for significance of difference. Results: statistically significant (.05 level) change in attitude toward the natural environment for all student groups; significant change in attitude on the attitude toward animals and toward plants subscales. Findings of the study accept the hypothesis that a 5-day environmental camping program for urban SHS students produces a significant positive change in students' attitudes toward the natural environment.

358. ZIMMERMAN, Kathryn L. The meaning of participation in handball at two structural levels. M.S. in Recreation and Parks, 1975, 89 p. (G. C. Godbey)
The meaning of participation in handball at 2 different structural levels, intramural and free play, was investigated. The Q-sort instrument was determined to be a suitable method for measuring meanings, observable and non-observable, of the handball experience to individuals. Meaning statements were generated through open-ended questionnaire, informal interview, and review of the literature. 40 free play and 40 intramural Ss were tested. 5 meaning clusters (cathartic; competitive, team oriented; socialization; physical fitness; and competitive, self-oriented) accounted for 52.79% of the variance. The proportion of intramural and free play Ss within the clusters was significant at the .10 level. The r between factors was high indicating that the clusters were related to one another, and that, while distinct types could be identified, sources of satisfaction from the experience were similar. 60% of the Ss had communalities above .50 indicating that the factors accounted acceptably for the Ss' responses. It was concluded that the Q-sort is an effective methodology for determining the meaning of participation in an athletic activity, that there are a variety of sources of satisfaction from a particular leisure experience, that varied structural level affects the meaning of participation for a portion of the participants, and that

individuals cannot be assumed to derive the same meanings from a particular leisure experience.

PURDUE UNIVERSITY
WEST LAFAYETTE, INDIANA (Marguerite A. Clifton)

359. BRUYA, Lawrence D. The effect of verbalized significant other treatment on measured self-concept during selected movement conditions. Ph.D., 1976. (M. A. Clifton)

Effects of significant other verbalization and selected movement conditions on self-concept and motor performance were investigated with 108 4th grade males and females. Exp Ss received either Treatment I, positive verbalization from the significant other teacher and the selected movement condition, or Treatment II, neutral verbalized treatment from the significant other teacher and selected movement condition. The control group received no specialized treatment. Self-concept was assessed using the Piers-Harris Childrens Self-Concept Scale. Motor Performance was assessed by use of author developed tests. Data were analyzed by use of ANCOVA. Changes in motor performance were effected through use of positive verbalization, with no significant sex differences. Positive verbalization and movement conditions did not alter self-concept. Movement conditions did effect changes in motor performance, with no significant sex differences.

360. GIACALONE, William R. Progressive relaxation and attention span of low attenders. M.S., 1976, 122 p. (M. A. Clifton)

Effects of the Bernstein and Borkovec revision of the Jacobson relaxation techniques were administered to low attending hyperactive children. A sample of 4th grade boys was screened for near point vision and for attention span using the Keystone Telebinocular Test 12 and the Continuous Performance Test. 16 low attenders were randomly selected to participate in the program of progressive relaxation, and 15 acted as controls without benefit of instruction. The 3 wk program was administered 5 days/wk with daily 40 min sessions. Results supported the prediction that there would be no difference in post-performance between low-attending exp and control groups.

361. LEIGHTON, Linda B. Black white integration in sport—an illusion? M.S. in Movement Science, 1976, 120 p. (H. M. Smith)

A paradigm was constructed for the consideration of sport as a social institution. The hypothesis tested was that black white integration in sport is an illusion. Data were collected from sources ranging from empirical research to biographic accounts and was confined to an examination of sport in the US. Tentative formulations were based on the researcher's conflict model of sport, where the 3 sports of baseball, basketball and football at the college and professional levels provided the context for an analysis of race relations. The data and subsequent interpretation lent support to the hypothesis that black white integration in sport is an illusion. Of particular interest is a listing of %s of black players and blacks holding managerial positions in the 3 professional sports studied.

362. MC KENZIE, Fiona M. A cinematographic analysis of the gait patterns of young children. M.S., 1976, 86 p. (C. J. Widule)

The walking gait of 6 3-yr-old male Ss was analyzed to establish procedures for obtaining kinematic characteristics of the body and body segments. Data were obtained from 16mm films taken at 64 fps with a shutter speed of 1/500 sec. The movement consisted of 2 complete gait cycles beginning with the right heel strike. Kinematic variables obtained from the analysis included the displacement and velocity of the body and segments, the kinetic energy of the body and segments, segment inclinations, angles at the hip, knee and ankle, and a ratio of the minimum kinetic energy of the body to the actual kinetic energy by each S. The angular displacement of the lower limbs appears to follow a predictable pattern, and the kinetic energy values indicate the possible existence of a range into which Ss with no apparent walking defect might fall. Results indicate the appropriateness of the procedures for establishing norms on the kinematic characteristics of gait.

363. RENTON, Deborah Jeanne. Selected dynamic characteristics of the back seat circle. M.S., 1976, 51 p. (C. J. Widule)

Using cinematography, the back seat circle on the uneven parallel bars was analyzed to determine how selected dynamic variables of hip angle, arm angle, wt-force moment, rate of change in angular momentum and path of the body center of gravity affect the performance of this gymnastic skill. The analysis also attempted to relate these findings to the coaching and teaching of the back seat circle. 5 Ss were selected from varied skill levels to determine differences in performance. Each film was indexed and the joint coordinates were analyzed by computer. Arm angle was found to be the most critical variable affecting performance of the skill for these Ss. The path of the body center of gravity was described in ideal terms and recommendations made in regard to the calculations of wt-force moment and rate of change in angular momentum.

SLIPPERY ROCK STATE COLLEGE
SLIPPERY ROCK, PENNSYLVANIA

(Bradley F. Keith)

364. FANTONE, James J. An attitude study regarding lifetime leisure physical activities in secondary schools in Beaver, Butler, and Lawrence Counties of Pennsylvania. M.Ed. in Recreation, 1976, 46 p. (James McFarland)

148 secondary PE teachers in the public schools of Beaver, Butler, and Lawrence Co., PA, were questioned to determine their attitudes toward leisure education as a part of the secondary curriculum. The survey instrument was a mail questionnaire. Other objectives were to determine: the most popular leisure physical activities taught in the secondary schools; the most popular leisure physical interests of the instructors; if the leisure physical interests of the instructors had any influence on activities that they taught; and limitations to the instruction of life-time leisure physical activities in the public secondary schools. Instructors overwhelmingly agreed that leisure education should be included among the major objectives of secondary PE; however the objective of leisure education has not been carried out in the 37 districts surveyed.

365. PFAFF, Dorothy Kaput. The effect of smoking and adiposity on blood pressures in 45 to 55 year old men and women in Butler County, Pennsylvania. M.Ed. in Health Education, 1976, 72 p. (F. J. Brannon)

Blood pressures (BP) were taken on 2002 men and women, aged 45-55, at hypertension screening clinics. Ss were questioned regarding their age, ht, wt, and whether or not they smoked. Data were analyzed with a X^2 test at the .05 level of significance. It was found that smoking and being male influenced diastolic BP and that systolic BP was influenced by being overweight.

366. WIKERT, Diane. A plan for development of an outdoor laboratory at Greenwood Cemetery Pond. M.Ed. in Recreation, 1976, 60 p. (C. Chase)

A study was conducted at a man-made land feature to determine the feasibility of building an outdoor learning area for school students. Data were collected on the extent of damage to the pond area, wildlife use of the watershed, and specific needs in repair. All information indicated that the repaired pond would be a suitable area of environmental education. However, there were considerable limits as to laboratory use and several outstanding safety hazards to be eliminated before the area would be available.

SOUTH DAKOTA STATE UNIVERSITY
BROOKINGS, SOUTH DAKOTA

(Neil W. Hattlestad)

367. KEOUGH, Michael G. An evaluation of football injuries in South Dakota high schools during the 1975 season. M.S. in Health, Physical Education and Recreation, 1976, 99 p. (N. Hattlestad)

The no., location, cause and frequency of occurrence of football injuries during the 1975 season in SD SHS were determined. Ss included injured football players from 145 SD SHS that completed the survey. Data were collected only on injuries that occurred during practices and games as played by varsity and jr varsity SHS teams within SD. Tallies of specific occurrences were compiled, %s were calculated, and a X^2 test was employed to compare differences between the frequency of occurrences in selected categories. It was found that approximately 1/5 of all SHS varsity and jr varsity players were injured during the 1975 season with the majority injured prior to the mid-point in the season. The largest no. of injuries reported occurred during games, and the specific body part most frequently injured was the knee. Injuries resulting in the greatest time-loss within a 7 day period following occurrence were those involving the foot and ankle. The majority of physician referrals were made by coaches and trainers. Injuries to the knee required hospitalization and surgery more frequently than those related to any other body part.

368. KROGMAN, Kenneth B. Selected flexibility exercises and baseball hitting proficiency. M.S. in Physical Education, 1976, 48 p. (N. Hattlestad)

The existence of a relationship between use of selected flexibility exercises and hitting proficiency was determined. Ss were 22 members of the 1975-76 SDSU Baseball Team. Data were collected from a pre and posttest of hitting proficiency and a battery of flexibility tests administered at the beginning and end of a 6 wk training period. Hitting proficiency was determined by recording the no. of fair territory hits attained by each S against a Jugs Pitching Machine. Flexibility was evaluated through use of direct and indirect measures of the range of motion in selected body parts. Changes in hitting performance and flexibility were analyzed by means of a 1-way ANOVA. It was found that participation in a flexibility program designed for this study did not significantly alter hitting proficiency at the .05 level. A multiple regression analysis did not reveal any combination of flexibility traits which might be used to predict hitting proficiency. A significant relationship was observed between the player's ability to radially flex the left wrist and hitting proficiency.

369. MICHAELSON, Maren E. Prediction of efficient player combinations among members of the South Dakota State University Women's Basketball Squad. M.S. in Health, Physical Education, and Recreation, 1976, 60 p. (N. Hattlestad)

To predict personnel who should be included in the most efficient starting line-up, a measure of the basketball playing ability of individual team members was determined. The Knox Basketball Skills Test (KBST) was administered to all members of the SDSU Women's Basketball Team. Team efficiency of player combinations was measured during 21 varsity games using the Keller Offensive and Defensive Efficiency Rating System. 12 player combinations met the minimum requirements of participation in 2 games with a total of at least 25 possessions. To determine whether offensive and defensive efficiency rating scores could be predicted from scores obtained by individual players on the KBST, 2 multiple regression equations were developed. A significant multiple regression equation to predict defensive efficiency rating scores was developed at the .05 level of significance. Although it appears that KR of the performance of players on the KBST can serve as a useful tool in player selection, it is apparent that other variables beyond those measured in the KBST must also be considered in player selection.

370. THORSON, James P. Leg power as affected by selected weight training exercises and forced-stretch training. M.S. in Physical Education, 1976, 54 p. (N. Hattlestad)

Effects of selected exercise programs involving forced-stretch training and wt training in the development of leg power were compared. 36 male Ss enrolled in the Fitness and Lifetime Activities program at SDSU were randomly assigned to the forced-stretch group, wt training group, or control group. Data were collected on performances in the 30 yd sprint, relative force test, and the vertical power jump, prior to and following the 5 wk training period. An ANOVA was used to determine the significance of between group differences, and a t test was used to determine significant changes within the groups. No significant differences were found between the groups at the .05 level. Significant changes were observed in leg strength among members of the forced-stretch group and the wt group. The wt training group and control group improved significantly in jumping ability. Previous researchers had suggested that Ss must demonstrate a minimal level of strength (above 2.0 on the relative force index) in order to benefit from forced-stretch training. Those who scored above 2.0 in the present study did not improve in jumping ability, but demonstrated significant improvement in leg strength.

371. WILLET, James E. The effects of an in season weight training program on the muscular strength of intercollegiate football players. M.S. in Physical Education, 1976, 39 p. (N. Hattlestad)

The influence of an in-season wt training program on the strength levels of intercollegiate football players was measured. Some previous investigations had revealed a decrement in strength among members of intercollegiate football teams where no in-season wt training program was used. 31 Ss from SDSU formed the exp group, while 43 Ss from Sioux Falls College served as controls. The exp group participated in an in-season wt training regimen, and the controls followed no organized wt training program. 4 parameters were tested 3 times during the season. Testing involved performance of 4 maximal lifts, including the bench press, the leg press, the neck press, and the reverse arm curl. To determine within group differences in changes at each test interval, the Dunnett's t test was used. 1-way ANOVA was used to assess between group differences. Significant differences in performance during several time intervals were observed for the exp group. All changes for the exp group represented an increase in strength. For the controls, only 1 difference was significant, and this represented a decrement in performance. No significant group and time interaction was observed with the ANOVA. There was a very significant difference, however, at all time intervals between strength levels of the control and exp groups. It was concluded that use of an in-season wt program of 15 min in duration, conducted twice weekly, was sufficient to maintain the strength of football players throughout the season.

SOUTHEAST MISSOURI STATE COLLEGE
CAPE GIRARDEAU, MISSOURI (R. F. Kirby)

372. ALLEN, William H. Study of an introductory method of rounding first base. M.A. in Teaching, 1976, 43 p. (R. F. Kirby)

24 male Ss were tested to compare an introductory method, the angle-bank (AB), against 2 generally accepted methods of rounding 1st base. The other 2 methods were the angle-out (AO) and the round-out (RO). Each S performed 9 trials, 3 with each method. The testing instrument used was the Dekan Automatic Performance Analyzer. The $\bar{X}$ of each method was calculated and used in a comparison by ANOVA. There was a significant difference in speed found between the AO and AB methods in favor of the AO method. No significant difference was found between the AB and RO.

373. FRAN[illegible], D. Glen. *Effect of bio-rhythms upon performances in selected weight training exercises among male athletes.* M.A. in Teaching, 1976, 106 p. (R. F. Kirby)

The effects of bio-rhythms upon selected wt training exercises was investigated. 25 JHS athletes performed max lifts in the bench press, clean and jerk, and leg press. Actual performance $\bar{X}$s followed the theoretical pattern of the bio-rhythmic physical cycle while failing to follow the patterns of the bio-rhythmic emotional or intellectual cycles. The $\bar{X}$s of average performances of the bio-rhythmic physical curve, as related to actual performances, revealed significant differences for all Ss tested in each wt lifting exercise. No significant differences were found for the $\bar{X}$s of average performances of actual performances related to the bio-rhythmic emotional or intellectual cycles.

374. OVERMANN, Raymond V. *Effects of coeducational and segregated classes on volleyball achievement of fifth and sixth grade female students*. M.S. in Teaching, 1976, 54 p. (R. F. Kirby)

Differences in volleyball achievement between girls taught in a coed class and girls taught in a segregated class were determined. 121 randomly chosen Ss were given a pretest. After 18, 25 min class periods of volleyball instruction, Ss were administered a posttest. Significant improvements were made by the 6th grade coed group on the pass and serve tests; the 6th grade segregated group on 2 wall volley tests and the serve test; the 5th grade coed class on a wall volley test and the serve test; and the 5th grade segregated class on all of the 4 tests. No significant differences between the segregated and coed methods were found.

SPRINGFIELD COLLEGE
SPRINGFIELD, MASSACHUSETTS (William J. Sullivan)

375. ADORANTE, Denise. *The effects of selected fencing skills on veering tendency of the blind*. M.S. in Physical Education, 1976, 50 p. (B. Jensen)

3 Ss, 2 female and 1 male (ages 26-28 yrs) were pretested on 3 separate days for veering tendency before beginning a 6 wk program of selected fencing skills. During the training program, Ss met for 1 hr, 3 days/wk. Ss were posttested for veering tendency on 3 separate days following the training program. Pretest $\bar{X}$ scores were compared with posttest $\bar{X}$ scores by the *t* test which showed no significant difference in veering tendency. It was concluded that the veering tendency of blind adult individuals is not affected by a 6 wk instructional program of selected fencing skills.

376. ALNER, Ernest J. *Attitudes of teachers in secondary Seventh-Day Adventist schools toward interscholastic athletics*. M.S. in Physical Education, 1976, 45 p. (W. Sullivan)

The Wear Attitude Inventory was modified to assess attitudes toward interscholastic athletics and administered to principals, pastors, and PE teachers (*N*=126) in the Seventh-Day Adventist secondary schools in the US. ANOVA and Duncan's multiple range showed that the PE teachers had a significantly ($p < .01$) more favorable attitude toward interscholastic athletics than the principals and pastors. The *t* test was used to determine if those in boarding schools differed from those in day schools. No significant differences ($p < .01$) were found.

BENNETT, Henry R. Joint thesis, see no. 383.

377. BENNETT, Patricia L. *The effect of selected visual conditions on balance performance in non-hearing boys and girls*. M.S. in Physical Education, 1976, 72 p. (B. Jensen)

Ss (*N*=18) were non-hearing children aged 10-12. They were tested on a static balance test (Balance Stick Test) and a novel motor balance test (Stabilometer) under 4 visual conditions; total vision with focusing of the eyes not being directed, focusing on an orange circle, focusing on a full-length mirror, and focusing on a vertical orange stripe. The exp design was a repeated measures; ANOVA was used to analyze data showing no significant differences among the 4 visual conditions. Correlations between the 2 balance tests ranged from .72 to .86.

378. BLACK, Bradley M. *The relationship of self concept to physical skill and athletic participation*. D.P.E., 1976, 85 p. (W. Sullivan)

32 *Ss* were classifed as athletes or non-participants and within each group were categorized as high or low in physical skill on the basis of 3 tests, the medicine ball put, the SBJ, and the zig-zag run. *Ss* were tested for self-concept using the Tennessee Self-Concept Scale. Factorial ANOVA showed no significant differences in self concept between athletes and non-participants. Significant differences ($p < .05$) were found between those of high and low physical skill on physical self-concept, moral-ethical self-concept and family self-concept. In each of these cases, higher physical skill individuals had the higher self-concept.

379. BRANDON, Don Preston. The effects of stimulus and movement complexity upon fractionated reaction time and movement time. D.P.E., 1976, 164 p. (W. Sullivan)

College student Ss (N=24), ages 19-29 yrs, were each tested under 4 treatment combinations resulting from the factorial arrangement of 2 factors being varied at 2 levels. The factors were stimulus complexity (simple and complex) and movement complexity (simple and complex). Dependent variables measured were premotor RT, motor RT, total RT and initial MT. Data were analyzed by a treatment X treatments X Ss ANOVA and product-moment correlations resulting in the following conclusions: RT and its components are lengthened as the stimulus and movement become more complex. However, making the stimulus more complex has a more pronounced increasing effect on total RT when doing a complex movment than it does when doing a simple movement. Initial MT is not affected by changes in stimulus complexity but is lengthened as the movement becomes more complex. There is a moderate positive relationship between motor RT and total RT while performing a simple movement but not while performing a complex movement. Variations in total RT occur more inthe central nervous system (premotoric) than in the periphery (motoric). There is no relationship between total RT and MT, premotor RT and motor RT, MT and motor RT and premotor RT and MT.

380. BROMAGE, Kathleen B. Female coaches' self perceptions: competitive self and social self. M.S. in Physical Education, 1976, 85 p. (B. Jensen)

Ss (N=56) were female basketball coaches from the secondary schools in sections of CT and MA. Each S was required to complete the Adjective Check List twice—once to ascertain the perception of her competitive self and once to determine the perception of her social self. Analysis was accomplished using non-parametric statistical techniques. It was concluded that there are 2 different self perceptions involved for the female basketball coach as she describes herself in a coaching situation and a social situation. Self perceptions of coaches in a competitive situation differ between experienced and beginning coaches. Coaches representing various member leagues tend to have similar self perceptions in a competitive situation. There is a positive relationship between a coach's competitive self perception scores and her coaching win-loss record for the scales of self-confidence, achievement, dominance, exhibition, autonomy, and change. There is a negative relationship between a coach's competitive self perception and her coaching win-loss record for the scales of abasement and deference.

381. BUCKETT, Bonnie-jean. A study of eye-hand coordination among mentally retarded and normal elementary school children. M.S. in Physical Education, 1976, 69 p. (J. Parks)

64 Ss were classified into 4 IQ groups as follows: IQ below 39, IQ between 40 and 54, IQ between 55-85, and IQ over 103. Each was tested for eye-hand coordination by means of the Budde Ball Bounce test 3 times. Results showed that the normal Ss (group 4) scored significantly higher ($p < .05$) than the retarded Ss (groups 1, 2, and 3). Among the 3 retarded groups, performance increased as IQ increased. There were no consistent differences in eye-hand coordination between boys and girls. All groups significantly increased ($p < .05$) performance from day 1 to day 3.

382. CONNELL, Kathleen T. The influence of competition on anxiety levels of women's intercollegiate basketball players. M.S. in Physical Education, 1976, 47 p. (E. Bilik)

Ss were 11 women varsity basketball players, ages 17-21, at Springfield College. The trait form of the State Trait Anxiety Inventory (STAI) was administered to Ss prior to the start of the regular season and again following tournament play. The state form of the STAI was administered 1 hr prior to and 1 hr following each contest. Analysis of the data led to the following conclusions: There was a difference in the post-game state anxiety levels. The intervening variable which caused the significance of the post-game state anxiety scores was the team's losses. There was a significant difference between the 3 games described as high anxious and the 3 games described as low anxious. The significance was the result of 2 factors—the caliber of competition and an emotional reaction to defeat. $\bar{X}$ trait anxiety levels did not differ in the pre-season and the post-season situations.

383. DEWEY, Carolyn and BENNETT, Henry R. The relationship between the practice of transcendental meditation and athletic ability. M.S. in Community and Outdoor Recreation (Dewey) and M.S. in Guidance and Psychological Services (Bennett), 1976, 109 p. (W. Sullivan)

31 Ss, members of varsity athletic teams at Springfield College, were randomly assigned to an exp group trained in the practice of transcendental meditation or a control group exposed to discussions about the importance of states of mind to athletic performance. Both groups practiced for 5 wks. Pretests and posttests of selected motor performance items and 16 psychological traits were administered. ANCOVA showed no significant differences between the 2 groups on any of the motor performance tests. Ss in the exp group were significantly more relaxed as

opposed to tense ($\underline{p} < .01$), more imaginative as opposed to practical ($\underline{p} < .10$), and more venturesome as opposed to shy ($\underline{p} < .05$) than Ss in the control group. No other psychological differences were found between the 2 groups.

384. FINN, Joan A. Perception of violence among high-hostile and low-hostile women athletes and non-athletes before and after exposure to sport films. D.P.E., 1976, 103 p. (W. Sullivan)

120 Ss were college undergraduate women students, 60 athletes and 60 non-athletes. Each group was divided into high and low hostile subgroups composed of 30 Ss. All Ss were tested for perception of violence before being randomly assigned to view an aggressive sport film, a non-aggressive sport film, or no film. Following the film viewing, Ss were posttested for perception of violence. Data analysis showed no significant differences among the 3 film viewing groups, between athletes and non-athletes or between Ss of high and low hostility.

385. HOPKINS, Philip D. The relationships between kinematic measures of body center of gravity and ball velocity in the tennis serve. M.S. in Physical Education, 1976, 50 p. (H. J. Scheuchenzuber)

6 members of the Springfield College varsity tennis team were filmed while serving the flat, slice and top spin tennis serves. 3 trials were used for each type of serve. A Cine 8 model SP-1 camera with a 25 mm lens was used to photograph the serves and subsequent ball flights: frame rate was 100 fps. 39 correlations were computed based upon film measurements. Only the correlation between ball velocity and recoiling distance on the slice serve ($\underline{r}=-.834$) was found to be significant ($\underline{p} < .05$).

386. KRIETE, Melinda M. The effects of a static exercise program upon specific joint mobilities in healthy female senior citizens. M.S. in Physical Education, 1976, 82 p. (J. Parks)

30 Ss were women over the age of 60 yrs with no incapacitating disorders. 15 were randomly assigned to an exp group and 15 to a control group. Ss were pretested for flexibility using the Leighton Flexometer. The exp group then took part in an 8 wk static exercise program which followed Frankel's collection of Preventive Care Exercises. The control group engaged only in their normal everyday activities. Following the program, all Ss were again tested for flexibility. Analysis of the data showed non-significant differences between the 2 groups in range of motion scores for ankle flexion and extension, elbow flexion, shoulder flexion, shoulder abduction, and hip abduction. There were significant differences ($\underline{p} < .05$) between the 2 groups for knee and hip flexion with the exp group evidencing greater ranges of motion.

387. LINDBLAD, Russell F. The effects of augmented feedback in the form of videotape replay on performance of the football punt. M.S. in Physical Education, 1976, 46 p. (J. Parks)

Ss, 84 boys (ages 10-11 yrs), from 2 VT ELE schools were randomly assigned by class to a control and 3 treatment groups: conventional instruction, conventional-videotape replay, and videotape replay. Following a pretest consisting of the AAHPER Football Punt for Distance Test, the 3 treatment groups received 6 wks of instruction on punting using the assigned treatment. At the end of 6 wks, all groups were posttested. ANCOVA found a significant difference at the .05 level for the treatment groups. It was concluded that: the use of augmented feedback in the form of videotape replay was not significantly better than conventional instruction; the conventional method of instruction was just as effective as the videotape replay methods in learning to execute the punt; and all 3 methods of instruction showed significantly more improved performance than no instruction.

388. LUNNETTA, Marilyn. The effects of two different KR precision levels on the accuracy and velocity of slingshot pitching. M.S. in Physical Education, 1976, 72 p. (B. Jensen)

22 Ss were women college varsity softball players (excluding pitchers) ages 18-24 yrs. Ss were given a 2 wk, 10 session instructional program in slingshot pitching and then randomly assigned to 1 of 2 feedback groups. The qualitative feedback group received visual information and knowledge of speed (within a range) as they pitched. The quantitative feedback group received a precise numerical measure of speed and accuracy as they pitched. A 2nd factor was represented by the 4 target areas. Results showed that quantitative KR led to more accurate performance scores than qualitative KR but there were no differences between the 2 relative to ball velocity.

389. MILLER, Richard C., Jr. The relationship between isometric strength and selected measures of anaerobic metabolism. D.P.E., 1976, 119 p. (W. Sinning)

Ss were 12 college students ranging in age from 18-28 yrs. Ss were measured for lower-limb strength and limb vol and for blood lactate and max VO_2 while performing submaximal and supra-aerobic exercise tests. ANOVA and zero-order correlations analysis resulted in the following conclusions: the size of the O_2 deficit is not affected by differences in work rate; there is an increase in the amount of blood lactate formed with increasing work rates ranging from submaximal to supra-aerobic exercise intensities; there is an increase in the O_2 debt with increasing work rates ranging from submaximal to supra-aerobic exercise intensities; strength is not a factor in the ability to develop an O_2 deficit, O_2 debt, or high blood lactate concentrations; strength is not a factor in the ability to use anaerobic energy sources.

390. MORRISON, Craig. The effects of visual conditions, motion and laterality on wrist shooting accuracy in ice hockey. M.S. in Physical Education, 1976, 41 p. (W. Sullivan)

Ss were 18 SHS varsity hockey players with normal vision. 11 Ss were crossed laterals and 7 were unilaterals. Each S took 15 shots for each visual condition (dominant monocular, nondominant monocular, and binocular) under each condition of motion (skating and stationary) for a total of 90 shots. The wrist shot was used and accuracy measurements were taken for each shot. ANOVA was used to analyze the data from the 3 factor mixed design and showed that laterality and visual condition have no effect on wrist shooting accuracy in ice hockey. There is no difference in shooting accuracy between the stationary and motion conditions when the S is sighting monocularly. When the S is sighting binocularly, the stationary position results in greater shooting accuracy than the moving position.

391. RACANIELLO, Annette F. The effects of selected interval exercise routines on bronchospasm in asthmatics. M.S. in Physical Education, 1976, 141 p. (W. Sinning)

Ss were 6 male and 3 female asthmatics, ages 7-24 yrs, who were asymptomatic at the time of initial testing but had suffered an acute asthmatic attack within the past 12 mos. Ss were tested for EIB while twice performing work under 4 different exercise routines: 2 min run-2 min rest; 2 min run-4min rest; 5 min run-5 min rest; 5 min run-10 min rest. ANOVA resulted in the following conclusions: Interval exercise produces EIB regardless of the exercise-recovery used; the amount of EIB produced during interval exercise becomes stabilized within a few repetitions of the exercise-recovery routine. An exception to this was found in the 5-5 routine where progressive increases in EIB were shown with repeated repetitions; during interval exercise, EIB is reduced during the running period but tends to increase during the recovery period; the 5-5 interval routine is less desirable than the 2-2, 2-4, and 5-10 routines for exercise by asthmatics.

392. SICONOLFI, Steven F. A validation of the national YMCA work capacity test. M.S. in Physical Education, 1976, 78 p. (W. Sinning)

Ss were 30 male volunteer college students who had no known physical disabilities. Ss were administered the following tests in random order: The PWC test as described in the Y's Way to Physical Fitness; PWC$_{150}$ and PWC$_{170}$, and PWC$_{max}$ according to the procedures of the Sjostrand test; a max VO$_2$ test by a modification of Dill's procedure; and the Astrand-Rhyming test for the estimation of max VO$_2$. Data were analyzed by the t test, correlational procedures, and regression analysis. Conclusions were: The YMCA-PWC test for the measurement of physical work capacities could be satisfactorily used to estimate PWC$_{150}$, PWC 170, and PWC$_{max}$ levels if a correction factor were used to compensate for the difference between the YMCA-PWC and the true PWCs; the YMCA-PWC test is inadequate for the estimation of max VO$_2$; the max VO$_2$ values derived from the YMCA-PWC test should not be compared to the normative data established by Astrand-Rhyming.

393. SOOD, Surinder Mohan. Student attitudes toward and an evaluation of selected physical education programs. M.S. in Physical Education, 1976, 59 p. (J. Parks)

170 students from 6 selected SHS (large, medium and small) on Prince Edward Island were randomly chosen and administered the Wear Attitude Inventory. The LaPorte Score Card-II was also used to evaluate the PE programs at the selected schools. Data analysis showed no significant differences in the $\bar{X}$ attitude scores of the students in large, medium, and small schools. The $\bar{X}$ attitude scores of 4.03 (small), 4.02 (medium) and 3.87 (large) indicated that the students held favorable attitudes toward PE. The correlation between the $\bar{X}$ attitude scores and the program evaluation scores at the 6 schools was -.143 ($p >$ .05), indicating no relationship between the attitudes of the students toward PE and the quality of the program.

394. WALL, Sonja. Racial attitudes of seventh and eighth-ninth grade black and white female participants and non-participants in intramural sports. M.S. in Physical Education, 1976, 47 p. (D. Kelly)

168 female JHS students (ages 11-15 yrs) from Springfield, MA, were classified according to grade level (7 and 8-9), race (black or white), and intramural participation (participants and non-participants). Ss were administered the Teenage Social Distance Scale to measure racial attitudes. ANOVA showed that the 8th-9th grade Ss had more positive racial attitudes than 7th graders. There were no differences in racial attitudes of intramural participants and non-participants nor between blacks and whites.

395. WOOLDRIDGE-O'HARA, Patricia. Effects of a daily exercise program on cardiovascular fitness of mentally retarded adults. M.S. in Physical Education, 1976, 56 p. (W. Sinning)

Ss were mentally retarded adults at 2 different sites. Group I Ss (N=8) were tested for cardiovascular fitness by a PWC test and then spent 5 wks (5 days/wk, 10 min/day) engaged in an interval training program before being retested. 5 wks later, a 2nd posttest was given. Group II Ss (N=5) were pretested and spent 5 wks with no cardiovascular exercise. They were tested again before engaging in the exercise program for 5 wks after which they were tested for the 3rd time. Analysis of data showed no significant increases in cardiovascular fitness as a result of participation in the exercise program.

396. YORK, Thomas J. The effects of a sportsmanship education program on attitudes toward sportsmanship. M.S. in Physical Education, 1976, 134 p. (B. Jensen)

49 Ss, 6th grade boys and girls from a JHS in East Longmeadow, MA, were assigned to be in an exp group (N=25) or a control group (N=24) and were all pretested with the Johnson Sportsmanship Attitude Scale. The exp group then participated in a 6 wk (2 days/wk, 40 min/day) program designed to teach them sportsmanship concepts following which they were posttested. During the 6 wk period, the control group met for 2 sessions where they viewed baseball films. They were also posttested. ANCOVA showed no significant difference between the 2 groups.

STANFORD UNIVERSITY
STANFORD, CALIFORNIA (J. E. Nixon)

397. FIGLER, Stephen K. Aggressive response to frustration among athletes and non-athletes. Ph.D. in Physical Education, 1976, 154 p. (J. Nixon)

The extent to which 2 aspects of aggressiveness exist among 376 male and female SHS athletes and non-athletes was established. The Rosenzweig Picture-Frustration Study, a semi-projective instrument, was used to measure the criterion variables of Reactive aggressiveness (R: anti-social, hostile emotional) and Instrumental aggressiveness (I: pro-social, problem-solving). Fisher's t test indicated that R was unrelated to athletic involvement in both males and females, while significantly greater R was indicated for males as compared to females among athletes (p=.001) and nearly significantly among non-athletes (p=.060). I was not significantly different between female athletes and female non-athletes nor between male non-athletes and female non-athletes. However, male athletes were significantly less I than female athletes (p=.019) and were nearly significantly less I than male non-athletes (p=0.64). When degree of contact (high, medium, non-contact) in Ss' sport was considered, ANOVA (Scheffé test) among males indicated lack of significance on R, but near significance on I as greater contact associated with lower I (p=.060). Among females, a dichotomized contact factor (moderate and non-contact) indicated a lack of significance on either R or I. The major predictions (based on common beliefs of practitioners) of lower R and higher I among athletes as compared to non-athletes failed to receive support.

398. TAYLOR, John L. Development and use of the physical education observation instrument (PEOI) for rating patterns of teacher behaviors in relation to student achievement. Ed.D. Curriculum and Teacher Education, 1976, 116 p. (J. E. Nixon)

The PEOI, which includes 14 teacher Ss' behavior variables, was developed and reliably used to identify effective PE teacher behaviors. A 3 rater X 3 teacher X 2 occasion Generalizability Study design indicated raters were stable on 13 of 14 variables from $\widehat{EP}^2$ .82 to .99. 21 male teachers were the main unit of analysis and 546 male SHS in 9-12th grades with 20-38 per class participated. Observers rated behaviors on 5 instructional occasions for 1/2 hr each. ANOVA revealed a significant difference ($p<.01$) between grade levels on the Russell and Lange pre- and posttest volley and serve. ANCOVA, with pretests as the covariate, indicated no significant difference between class locations and schedules. ANOVA showed 11 variables were significantly different ($p<.01$) across teachers, and 1 significant ($p<.05$). Pearson r demonstrated that a no. of variables on the PEOI highly correlated. Stepwise multiple regression provided linear models with teacher behaviors individualized instruction and explanation predicting Ss' performance improvement on posttest volley and teacher demonstration and reinforcement predicting Ss' performance improvement on posttest serve. These behaviors were significant ($p<.05$). A factor analysis illustrated that PEOI variables loaded under 4 factors and a path analysis was used as an adjunct statistic. The PEOI was found to be a reliable instrument which aided in supporting the theory that different teacher behaviors tend to promote Ss' learning of certain motor skills.

STATE UNIVERSITY COLLEGE AT BROCKPORT
BROCKPORT, NEW YORK (M. P. Puthoff)

399. LEBLANC, David G. A comparative investigation of performance on static and dynamic balance tasks by Down's syndrome and non-Down's syndrome trainable mentally retarded. M.S. in Education, 1975. (R. French)

Performance on static and dynamic balance tasts by 25 DS and 25 non-DS Ss when controls were placed on the variables of CA and

IQ was compared. Ss' CAs ranged from 9-16 yrs, and IQs ranged from 25-49. Findings indicated no significant difference between DS and non-DS Ss on static balance. In contrast, DS Ss had significantly superior performances when compared to non-DS Ss on dynamic balance. Based on the findings of the present investigation, the recommended need for a special PE training program for DS individuals, separate from those programs offered other TMR, seems to be unwarranted.

STATE UNIVERSITY OF NEW YORK AT BUFFALO
BUFFALO, NEW YORK (J. Baker)

400. SHEERAN, Thomas J. An electrogoniometric analysis of the knee and ankle in competitive and noncompetitive swimmers. Ed.D. in Physical Education, 1976, 168 p. (J. Piscopo)

2 groups of male college students were tested to determine movements at the knee and ankle during performance of selected swimming kicks. The 1st group consisted of 14 varsity competitive swimmers; the second of 14 non-varsity calibre performers. Ss were tested while performing the front flutter, back flutter and dolphin kicks. Data were analyzed for range of movement, max flexion, max extension, and $\bar{X}$ range of movement. Waterproofed electrogoniometers were used to obtain joint motion measurements. Separate 1-way ANOVA was used to determine significant differences among kicks. Pair-wise comparisons using t were used to determine difference between knee and ankle movement. Statistical analysis revealed a difference of knee and ankle performance between competitive and noncompetitive swimmers. In addition, the knee action of competitive swimmers in the back flutter is similar to the action used in the front flutter and dolphin kicks; however, the front flutter movement is different from the dolphin kick. Knee motion among noncompetitive swimmers was found to be similar among all kicks performed. Ankle motion of competitive swimmers was similar when performing the front flutter, back flutter and dolphin kicks.

401. SIMON, James E. Relationship of a selected health-related attitude (Marijuana) of adolescents to their perceived attitudes of mothers and peers. Ed.D. in Health Education, 1976, 180 p. (C. R. Meyers)

Findings indicated the existence of a predicted association of adolescents' marijuana attitudes (AA) with their perceptions of related attitudes of age-peers, and a "generation gap" between these perceptions and those of adolescents regarding like mother attitudes. Vincent's Scale to Measure Attitude Toward Smoking Marijuana was administered anonymously to a sample (N=773) of 8th, 10th, and 12th grade Ss and 496 of their mothers (MA). Marijuana smoking experience of Ss and their age-peers was determined through questions added to the attitude instrument.

Instrument instructions were modified to obtain measures of Ss' perceptions of 709 age-peer attitudes (PPA) and of 690 mother attitudes (PMA). Results relative to hypothesized differences between specific mean-pairs indicated: AA is more favorable (higher on the attitude continuum) than both MA and PMA, there is no difference between MA and PMA, and PPA is more favorable than AA. It was also found that there is: a moderate positive correlation of AA with PPA and a low positive correlation with PMA, a low positive correlation of MA and PMA, and a meaningful difference between the correlation of AA with PPA and PMA. All tests for significance were conducted at the .05 level. Although main effects were found for sex, grade, and marijuana smoking experience with respect to AA and PPA, no meaningful interaction effects were revealed for these variables. Incidental findings, however, disclosed an interaction of AA, marijuana smoking experience, and marijuana smoking behavior of age-peers. Both AA and age-peer marijuana smoking behavior were found predictors of S marijuana smoking experience.

402. SYLVIS, James. Effect of operant conditioning on the motor performance of educable mentally retarded boys. Ed.D. in Physical Education, 1976, 107 p. (C. R. Meyers)
Effects of a token reinforcement program on free play activity level and the motor performance of EMR boys was determined. Ss were 14 EMR males (CA = 11.9-14.3, IQ = 62-76), who participated in 2, 30 min PE classes/wk. The study covered a period of 9 wks and was divided into 4 phases. Phase I was a 2 wk period in which Ss were acclimated to video-taping procedures necessary to analysis of free play behavior. During this time they were also introduced to the token economy. Phase II was a 3 wk period of token reinforcement. Phase III consisted of 2 wks of extinction. Phase IV was 2 wks in which tokens were reintroduced. Videotapes of free play activity were taken during the last wk of each phase. Ss were also given a pre- and posttest on 3 motor performance items (vertical jump, sit-up, straight-arm hang) during the 1st and 3rd phase. Findings indicated that implementation of the token reinforcement program resulted in a significant increase in free play behavior and a significant difference in straight-arm hang score.

403. VOETSCH, Edward F. Proposed guidelines for intercollegiate athletics in New York State community colleges. Ed.D. in Physical Education, 1976, 268 p. (L. R. Meeth)
A validated set of 57 intercollegiate athletic guidelines was mailed to representative samples of 7 NY community college constituency groups consisting of presidents, trustees, legislators, general faculty, administrators, PE faculty and students. 9 stratified, randomly selected institutions were included in the study. The constituency group representatives were requested

to record their opinions to each guideline, according to a 5-point rating scale that measured the strength of their agreement or disagreement. A 63% response rate (847 completed opinionnaires) was obtained. Data were analyzed to determine degrees of agreement/disagreement and significant differences between group responses to each guideline. A Q-factor analysis was computed to determine similarity of group profiles. Follow-up interviews were conducted with selected representatives from each constituency group where data analysis revealed differences in response to individual guidelines. By using perceptual information gleaned through follow-up interviews to supplement the empirical data obtained through the survey instrument, it was possible to ascertain reasons for differences in constituency-group responses to the set of athletic guidelines. As a result, a finalized set of athletic guidelines was formulated based upon a composite of group viewpoints.

SYRACUSE UNIVERSITY
SYRACUSE, NEW YORK (Garrett P. Caffrey)

404. KATZMAN, Lawrence S. A study to investigate the relationship between physical activity and frequency of sexual behavior among selected males ages 45 to 74. Ed.D. in Health Education, 93 p. (E. Milner)

155 men, ages 45-74, completed questionnaires dealing with physical activity, mental attitude, and desire for sex. The focus was to determine the difference in sexual behavior among males representing high and low physical exertion levels. Among the top 20% of physically active men the $\bar{X}$ sexual outlet was 10.7/mo, while among the lower 20% the $\bar{X}$ sexual outlets was 7.0/mo. This $\bar{X}$ difference was significant at the .02 level of confidence. Conclusions of the research based on 155 questionnaires and 32 personal interviews with Ss were: There is a significant relationship between the level of physical activity and the frequency of sexual activity among males in the age range of 45-74. There is a tendency for physically active males to attribute a positive mental attitude and a desire for sexual outlets to their physical activity. A high level of physical exercise contributes to a male's sense of physical well-being, which is often reflected in a heightened desire for sexual activity. Males in their late 40s and 50s who engage in regular and vigorous physical activity and possess a positive mental attitude can expect to participate in sex outlets with regularity and frequency comparable to men much younger.

405. PAVIA, Grant R. An investigation into the socioeconomic background, academic attainment, and occupational mobility of Syracuse University letterwinners. Ed.D. in Physical Education, 1976, 249 p. (B. Lancey)
The socioeconomic background, academic attainment and occupational mobility of letterwinners from 1908 to 1974 was examined. These 3 constituents were analyzed in terms of intersport differences, time-period differences, and differences between scholarship and non-scholarship letterwinners. This is the 1st reported study on college athletes from a private university. It is part of a comprehensive, on-going research project on the sociological background of athletes. Data were collected by questionnaire mailed to 2,658 letterwinners representing 18 sports. A total of 986 (37%) were returned. It was, however, demonstrated that the sample was, for the most part, remarkably representative of the total population of letterwinners as measured against available criteria. Major conclusions were: a definite pattern of social stratification of sports was evident, letterwinners had been most successful in terms of academic attainment and occupational mobility, numerous differences existed between scholarship and non-scholarship Ss in terms of social origin and the influence of particular "opportunity network" factors on occupational attainment, although practically no differences existed in terms of their academic attainment of occupational mobility upon graduation.

406. SHINE, Gary P. An investigation into the sociological background of the athletes who represented the United States of America in the XII Winter Olympic Games of 1976. Ed.D. in Physical Education, 1977. (G. Caffrey)
This study, the 1st reported sociological investigation of US elite winter athletes, was concerned with 3 selected aspects: socioeconomic background, impact of parental support, and the "pipeline" followed to develop from a neophyte athlete to elite. Each aspect was analyzed with regard to all Ss, male-female, and intersport differences. Data were obtained by questionnaire mailed to the 112 Olympians (of 117) for whom the USOC had current mailing addresses. 89 (79.5%) were returned. Data revealed that Ss who came from families whose "head of family" possessed a low status job were in the distinct minority; the majority of Ss' parents had achieved at least a college education; 42.9% of the female Ss' fathers had done post graduate work as opposed to 17.6% of the male Ss' fathers; parental support (all forms) was considered very important by most Ss; of the 8 sports, in only 2 (nordic skiing and ice hockey) did the American education system play a key role in the athletic development of the athletes; in 5 of the 8 sports, the median age of Ss at the time of the Games was in excess of 22.0 yrs.

TEMPLE UNIVERSITY
PHILADELPHIA, PENNSYLVANIA (P. A. Molé)

407. THOMAS, D. Paul. Effects of endurance-training, low-protein diet and swim to exhaustion on rat myocardial ultrastructure. Ph.D. in Physical Education, 1977, 125 p. (P. A. Molé)

Combined effects of 10-day exposure to either regular (22% casein) or low-protein (8% casein) diet and exhaustive swim on myocardial ultrastructure were studied in young female adult rats. Quantitative analysis of electron micrographs from perfusion-fixed hearts showed significant differences between exhausted regular diet (RDE) and low-protein (LPE) animals when compared to resting counterparts (RDR, LPR). In RDE and LPE rats the intracellular sarcoplasmic volume fraction (S) and the mitochondrial/myofibrillar volume ratio (M/F) were increased 72 and 19% respectively ($p < .05$), while the F fraction decreased 11% ($p < .05$). Rats on analogous diets trained by swimming for 6 wks (RDT, LPT) were smaller ($p < .001$) but had larger hearts ($p < .05$) than sedentary freely-eating groups (RDS, LPS). Hearts from RDS, LPS, RDT and LPT rats sacrificed in the exhausted state were similar to RDE and LPE animals in % ventricular water and intracellular volume fractions of M, F and S. Unlike skeletal muscle, the relative intracellular protein fractions of the myocardium are unchanged in response to a swimming program stressful enough to produce cardiac hypertrophy in rats consuming either a regular or low-protein diet. Alterations in measured intracellular volume fractions from resting to exhausted state could be due to increased susceptibility of the cell to post-mortem artifact rather than to in-vivo changes.

TEXAS A&M UNIVERSITY
COLLEGE STATION, TEXAS (L. J. Dowell)

408. BOE, Gerard P. A descriptive characterization and comparison of blood donors and non-donors in a community blood program. Ph.D. in Allied Health, 1976, 109 p. (L. Ponder)

Residents of the Bryan-College Station (SMSA) (N=256) were administered the BDIP, the Gordon Personal Profile and the Gordon Personal Inventory. Ss were divided into 2 groups, Blood Donor (BD) (N=141) and Non-donors (ND) (N=124). BDs were randomly selected from lists of verified donors and NDs were systematically chosen from a city directory. It was found that BDs and NDs were similar in many of the characteristics studied. BDs were found to be more vigorous and possessed a greater propensity for original thinking than NDs. BDs were also found to be better educated and more socially active in terms of organizational membership and voluntary contributions. NDs refused to cooperate at a significantly higher rate than did BDs.

409. BRADLEY, Patrick W. The relationship of physical training and time components of the left ventricle. M.S. in Physical Education, 1976, 34 p. (R. Hurley)
College male volunteers (N=30) were divided into 2 equal groups of untrained (below average fitness levels) and higher trained distance runners. An electrocardiograph, heart sound microphone, and a photoelectric pulse pick up were attached to each S while resting. Each S rode a bicycle ergometer for 5 min at 700 KPM at 60 cycle pedal speed. During the last 30 sec of the exercise period, recordings were made and at 3 min post-exercise final recordings were made. 10 consecutive cycles were averaged to determine selected cardiac-cycle time components for resting, exercises, and post-exercise. The selected cardiac-cycle time components included (PEP), (EML), (ICP), (LVET), (MS), (TS) and R-R' interval. It was found that highly trained individuals have significantly increased resting and post-exercise pre-ejection periods, significantly increased resting electromechanical lag and isovolumetric contraction periods and significantly increased resting, exercise and post-exercise mechanical systole and total systole. Highly trained Ss have significant reductions in exercise and post-exercise left ventricular ejection time.

410. CUNNINGHAM, James E. A cinematographical analysis of three selected types of football punts. Ph.D. in Physical Education, 1976, 137 p. (L. Dowell)
2 varsity football punters at Texas A&M were selected to punt 3 types of football punts: Type I punts—the long axis followed its trajectory of flight and landed on its front edge; Type II punts—traveled at an angle to the trajectory and landed with the long axis of the football parallel to the ground; and Type III punts—traveled at a marked angle to the trajectory and landed on the rear tip. 3 cameras were used in data collection. A Locam high speed camera set at 200 fps was placed at a right angle to the point of contact of the football at a distance of 30 ft. A Bolex H-16 camera set at 64 fps was placed 60 ft in front of the expected point of contact, and a Bell and Howell 70 model camera with a film speed of 24 fps was placed in the upper deck of Kyle Field. A reference grid, nos. stand, and Dwyer wind meter were also used. Type I punts (N=12), Type II punts (N=12), and Type III punts (N=8) were selected for analysis on the Vanguard Analyzer. It was found that the Type I punt averaged greater distance, initial velocity, and hypothetical distance than Type II or Type III punts. Type I punt produces a smaller follow through angle of the kicking leg than Type II and

Type III punts. The trajectory of a Type I punt more closely follows the prescribed parabola on the downward flight than the Type II or Type III punts, and air resistance was found to reduce the distance a football travels by approximately ½.

411. ELLEDGE, Jerry R. *A study of the impact of student population on selected water quality parameters of wastewater effluent discharge*. Ph.D. in Health Education, 1976, 80 p. (R. Hurley)

Biochemical O_2 Demand, Suspended Solids, PH (acidity-base), and Fecal Coliform Count were used to ascertain the quality of effluent discharge from 2 separate wastewater facilities. Sampling schedules were selected to represent the times when the student population of Texas A&M was absent and present. A factorial analysis and separate linear regressions on data were performed to investigate the effect of hydraulic loading on the selected water quality parameters. Hydraulic loading exists when the student population is present, and there is a relationship between hydraulic loading and effluent quality.

412. HUSAK, Patricia L. *Self-actualization as it relates to sports participation*. M.S. in Physical Education, 1976, 59 p. (R. Magill)

13 male and 16 female varsity swimmers at Texas A&M volunteered to take the Personal Orientation Inventory (POI) 1 wk prior to their championship meet at the end of their regular season. The *t* test was used to determine differences between groups of swimmers. It was found that male swimmers have characteristics more like the self-actualized person than female swimmers.

413. HUSAK, William S. *The relationship among perceptual motor ability, self-concept and reading achievement in early elementary school children*. M.S. in Physical Education, 1976, 77 p. (R. Magill)

Ss (*N*=213), 1st, 2nd, and 3rd grade students, were administered the Science Research Associates Assessment Survey; 3 tests of perceptual-motor ability, the stabilometer test, a modified manual Dexterity test and a tapping test, and the Primary Self-Concept Inventory. It was found that a relationship exists between manual dexterity and the ability to perform a task with speed and accuracy and that the level of predictability of perceptual-motor ability and self-concept to reading achievement is low.

414. REAMS, David N. *A comparison of the effectiveness of two methods of teaching selected sports activities to third and sixth grade children*. Ph.D. in Physical Education, 1976, 167 p. (C. Landiss)

Students in 3rd and 6th grade classes were randomly assigned to a control, movement education, or teacher directed treatment.

Ss received 20 min instruction 5 days/wk for 21 days in basketball, soccer, and softball. 6 skill tests and an attitude survey were given before each unit and repeated at the end of the unit. Ss were filmed in a modified game, and the film was evaluated by a jury of experts. Classes were video taped and evaluated to determine the use of time during the lesson. It was found that in ELE grades movement education was superior to teacher directed education in improving skills, in developing the ability to apply skills in game situations and in developing a more positive attitude. Differences between movement education and teaching directed education decrease as previous exposure increases.

415. REEVE, Thomas G. Processing demands during the acquisition of motor skills requiring different feedback cues. Ph.D. in Physical Education, 1976, 153 p. (J. Chevrette and R. Magill)

In 2 separate exp, Ss (N=30) had 80 trials to learn a self-paced location or distance response. In each exp, Ss were provided either visual or kinesthetic feedback cues. The secondary task RT probe technique was used to determine the processing demands at the Initiation, Movement I, Movement II, and Termination Probe positions. With the alpha level at .05, Ss X Trials ANOVAs for each feedback condition revealed that decreases in processing demands occurred with practice. Comparison of probe RTs to base RTs indicated that kinesthetically controlled location and distance movements required processing capacity during all phases of movement. For visually controlled location movements, a non-attention demanding mode of responding controlled the 1st half of the movement and a process demanding mechanism controlled the response termination. The visually controlled distance movement required processing capacity at all phases except at Movement Probe I. Multivariate ANOVAs for between group comparisons demonstrated that visually controlled responses required significantly less processing capacity than did kinesthetically controlled movements during the initiation and movement phases of motor control.

416. RIGGS, Charles E. The effect of exercise on the severity of isoproterenol-induced myocardial infarction. Ph.D. in Physical Education, 1976, 77 p. (C. Riggs)

93 male Sprague-Dawley rats were randomly divided into 3 groups: sedentary-isoproterenol (SI), exercise-isoproterenol (EI), and exercise control (EC). Animals of the EI and EC groups exercised daily for 30 days on a treadmill at 1 mph and 2% grade, while animals of the SI group remained sedentary. 8 animals were assigned to the sedentary control (SC) group which remained sedentary throughout the exp period. 48 hrs after the final exercise period, SI and EI animals received a single

subcutaneous injection of isoproterenol (250 mg/kg body wt. The difference between the 2 isoproterenol treated groups for S mortality was significant ($p < .05$), with animals of the SI group experiencing the greatest mortality. Serum CPK activity for EI animals was significantly ($p < .05$) greater than for the SI or EC animals 20 hrs following isoproterenol injection. No statistically significant differences were observed between the 2 isoproterenol treated groups for severity of the induced lesions, changes in heart wt, or heart wt to body wt ratios. Results indicated that exercise reduced the mortality associated with the induced infarction but had little effect on the severity of the infarction.

417. SEIDEL, Harry S. A comparative analysis of the layout back somersault and full twisting back somersault in tumbling. M.S. in Physical Education, 1976, 139 p. (L. Dowell)

A nationally ranked gymnast executing a layout back somersault and full twisting back somersault was filmed at 64 fps with 2 16mm motion picture cameras. Distances and multipliers were determined by filming a timing device and grid in the photographic field. The film was analyzed on the Vanguard Motion Analyzer. It was found that this layout back somersault was characteristically more vertically oriented than the full twisting back somersault; the linear velocities were greater for the full twisting back somersault; an arch was used to aid rotational speed in the layout back somersault where a pike and twist were used in the full twisting back; a redirection of forces about the axes of the body took place in the full twisting back somersault prior to and during the initiation of the twist and the total rotational degrees were greater for the trunk of the layout back somersault due to its more vertical orientation.

418. SHEFFER, Daniel B. The components of variability in volumetric distribution determination by stereophotogrammetry. Ph.D. in Physical Education, 1976, 70 p. (C. Landiss and G. Jessup)

6 male Ss were filmed with 2 sets of Hasselblad Super Wide Angle Cameras linked by electro-mechanical shutter releases and synchronized with flash projectors to provide simultaneous recording of the front and rear stereo pairs of each S for 8 consecutive days. This stereophotogrammetric technique was used for determination of volume distribution. It was concluded that by using the biostereometric technique of stereophotogrammetry it is possible to measure the volume distribution of human subjects, which is not feasible by standard anthropometric techniques. It was also found that total body volume and right leg volume remain stable over an 8 day testing period and that the

volume of a 10 cm leg segment does not vary from day to day.

419. WEINSTEIN, Ronald D. *The construction of an instrument to measure attitudes of college students regarding radiological health*. M.S. in Allied Health, 1976, 102 p. (L. Ponder)

A Radiological Health Attitude Inventory was constructed based on the literature and reviewed for validity and relevance by a panel of radiological experts. A preliminary form of 43 items was administered to students at Texas A&M (*N*=273). 3 items were deleted because of low discriminating power, and all items satisfied the requirements of a Likert-type direct measurement scale. The final form was again administered to 349 Texas A&M students. The *Ss*' weighted scores of both administrations were combined for normative study (*N*=622). *r* was estimated at .73 by Cronbach's Alpha, a generalization of Kuder-Richardson formula-20. The frequency response distribution of the *Ss*' weighted scores indicated that the instrument was more effective in discriminating among lower scoring *Ss*.

TEXAS WOMAN'S UNIVERSITY
DENTON, TEXAS (Marilyn Hinson)

420. IRANI, Gool R. *The influence of the double hook sit on the lateral stability of the knee joint of the adult female*. M.S. in Physical Education, 1975, p. 58. (M. Hinson)

40 adult women volunteers (ages 20-25), students at TWU, with no record of previous knee injury were studied. An instrument for measuring lateral stability was selected, constructed, and tested for reliability (*r*=.64 to .90). *Ss* selected for the study were pretested and posttested for lateral stability of the knee joint. On the basis of the pretest, 2 equated groups were formed, and the exp treatment randomly assigned to 1 group. The double hook sit was performed for 2, 5 sec periods 3 days/wk for 4 wks by the exp group. Data collected on the completion of the posttest were treated with a 3-way ANOVA with repeated measures on 2 factors. A Scheffé test was used to determine whether significant differences existed between $\bar{X}$s of interaction effects. Findings revealed that the double hook sit made no significant difference in the amount of lateral stability at the knee joint as measured by a pre- and posttest. However, a significant interaction between/among groups, trials, and legs with regard to abduction was obtained. It was found that both knees of the exp *Ss* became less stable in the tibial abduction from pre- to posttest. However, both knees of the control *Ss* increased in stability in tibial abduction toward the end of the exp period. Also, a significant difference was found between the stability of the left and right knees on the pretest with regard to adduction of the knee joint.

421. JOHNSON, Kathleen S. Aerobic and anaerobic power of high school swimmers before and after a competitive season. 1977, 88 p. (M. Hinson)

38 female and 34 male SHS varsity swimmers were tested on the Margaria Anaerobic Power Test for assessment of anaerobic work capacity for both males and females: The Cardiovascular Efficiency Test for Girls and Women for assessment of aerobic work capacity for females, and the Cotten Revision of the Ohio Step Test for males. Ss selected for the study were tested preseason and postseason on aerobic and anaerobic work capacity. Ss trained under the same training program regardless of sex and were then divided according to whether they were sprinters or distance swimmers. Data collected at the completion of the season were treated with 2 2-way ANOVAs with repeated measures and a 3-way ANOVA with repeated measures. A Scheffé test was used to determine whether significant differences existed between $\bar{X}$s of interaction effects. Findings revealed that when identical training programs are engaged in by both male and female SHS swimmers, gains over the season in aerobic and anaerobic work capacity are different both between the sexes and between the distances swum. Female sprinters do not differ from female distance swimmers in anaerobic work capacity, but they are lower than female distance swimmers in aerobic work capacity. Male sprinters do not differ from male distance swimmers in either aerobic or anaerobic work capacity. It was also found that males exhibit a greater anaerobic work capacity than do females and that both males and females increase in anaerobic work capacity through the season; however, only males increase in aerobic work capacity.

422. JOHNSON, Rosa Lee. Playground equipment preferences of fourth and fifth grade students, elementary teachers and parents. Ph.D. in Physical Education, 1976, 74 p. (J. Teaff)

The preferences of 80 4th and 5th grade students, 25 teachers, and 25 parents for selected pieces of playground equipment and the reasons for the preferences of teachers and parents were determined. The paired comparison test has 28 combinations of playground equipment and the opened-end questionnaire provided space for teachers and parents to state the reasons for their preferences. An in-depth interview with teachers and parents clarified statements made on the interview sheet and provided additional information. The reliability coefficient for the test, as computed by the test retest method was .988 for the adults and .976 for the 4th and 5th grade children, respectively. There was no significant difference among the preferences of children, teachers, and parents for selected pieces of playground equipment. The reasons for the preferences of teachers and parents were: safety, fun, versatility, creativity, usage capacity, "played on it as a child," physical development, and "think children like it."

423. MOEN, Susan M. *Eye tracking during the tennis forehand volley*. M.S. in Physical Education, 1975. (M. Hinson)
Using 2 cameras and an Eye Mark Recorder, photographic evidence was gathered regarding the amount and periods of time skilled adult women watch the ball in tennis. The no. of frames of the film in which the eyes were not fixated on the ball were determined and converted into time in sec. The no. ranged among *Ss* from 1 to 4 frames immediately prior to ball contact which represented a time period of from .05 to .20 sec. Translated into ft before contact, the ball was not tracked during a distance ranging from 3.2 ft to 12.8 ft. It was also found that the $\bar{X}$ ball velocity was 64 ft/sec. Data indicated that either the *Ss*' eyes were not capable of tracking a ball traveling at 64 ft/sec at a relatively close distance or the tracking was not necessary.

UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA, CANADA (R. G. Glassford)

424. LEIPER, Jean M. *The International Olympic Committee: The pursuit of Olympism, 1894-1970*. M.S. (R. G. Glassford)
The International Olympic Committee (IOC), its structure, function, and operation were examined. The period of genesis of the modern Olympic Games was investigated, including the Congress of Paris, at which the Games were reestablished. The formation of the IOC and the development and change of the Olympic rules were studied and discussed. Particular emphasis was placed on Olympism, its definition and the actions of the IOC to promote and defend Olympism, as determined from a study of the IOC Minutes from 1894 to 1970. Examination of Olympism was divided into the following topics: Philosophy, Factors, Religion, and Symbols and Traditions. The actions of the IOC were analyzed according to 4 factors of Olympism: Amateurism, Physical and Character (Moral) Development, Internationalism, and Aesthetics and Arts and Letters. It was suggested that the IOC had not succeeded in spreading an understanding of Olympism as the philosophy of sport underlying the Olympic Games. Several reasons for this failure were proposed.

UNIVERSITY OF ARKANSAS
FAYETTEVILLE, ARKANSAS (George Moore)

425. ATKINSON, James R. Predicting performance in tennis, badminton, and handball from certain physical traits. Ed.D. in Physical Education, 1976, 71 p. (R. Ryan)

Regression equations, using physical traits and class commitment as predictors, were developed for determining potential skill in beginning tennis, badminton, and handball for college men. The physical traits used were: agility, power, hand-eye coordination, and visual acuity. Skill level was determined by a round-robin tournament in each sport. Ss were 140 college men enrolled in beginning classes for each sport and taught by the whole-part method. Control Ss included 138 students enrolled in other beginning classes and taught by the part method. Another purpose of the study was to determine if practice in the sport would significantly improve scores on the physical traits. A paired t was used. A t was used to compare exp and control groups. Conclusions were: class commitment is probably an integral part of skill attainment in the sports studied; students taught tennis and badminton by the whole-part method experience greater gains in agility and hand-eye coordination; students taught tennis by the part method experience greater gains in shoulder girdle power.

426. CLARDY, Donald B. The professional preparation of health and physical education graduates at Pikeville College with implications for curriculum development. Ed.D. in Physical Education, 1976, 176 p. (G. Moore)

The study undertook to identify, analyze, and characterize the recommendations of curriculum leaders as well as practical conditions which influence the development of a workable professional PE curriculum at Pikeville College (PC), Pikeville, KY. The procedures were: an in-depth review of the literature; an examination of requirements which would have an impact upon the development of a professional preparation program; the development and administration of a survey instrument for PC graduates regarding their professional preparations; an inspection of the educational philosophy and administrative structure at PC as they would influence curriculum development; and the identification of PE activity backgrounds and interests of majors at PC. From these activities, recommendations were made for the development of a PE teacher training program at PC.

427. HURSHMAN, Larry G. The effects of sidestream cigarette smoke inhalation on work capacity and cardiopulmonary measures among smokers and non-smokers. Ed.D. in Physical Education, 1976, 137 p. (B. Brown)

Ss were 32 women categorized into 4 smoking history groups:

nonsmokers, light smokers, moderate smokers, and heavy smokers. 6 tests per S were conducted using 3 smoke exposure (20ppmCO) and 3 non-exposure sessions. A blood sample was drawn and analyzed for COHb prior to and following each session. HR, blood pressure (BP), and VO_2 were determined at resting, and during and after a bout on a treadmill. Analysis was by ANOVA with repeated measures and Duncan's New Multiple Range Test. Conclusions were that sidestream cigarette smoke significantly raises both resting and max HR for the exercise level and increases the systolic and diastolic BP during and after exercise. The COHb levels of the nonsmokers were increased under smoke exposure, whereas the COHb levels of the smokers were decreased. The nonsmokers had lower HR and BP throughout all phases of exercise and recovery. The PWC was decreased under cigarette smoke exposure. Sidestream smoke was not found to significantly affect total O_2 debt.

428. OSWALT, Helen A. The relationship of specific aptitudes to ability in square dance. Ed.D. in Physical Education, 1976, 49 p. (G. Moore)

Ss were 46 college students, 23 male and 23 female, enrolled in a square dance class at Northern Arizona University. Measures were obtained for: ability to follow directions, ability to recognize spatial relationships, ability to respond quickly and accurately in a given direction, and the ability to recognize rhythmic patterns. Ability to square dance was determined by experts from filmed performances. A comparison of males and females using t indicated a significantly higher $\bar{X}$ for females in square dance ability. Stepwise multiple regressions were computed for men and women with results indicating the measures were not practical to predict square dance ability.

UNIVERSITY OF BRITISH COLUMBIA
VANCOUVER, B.C., CANADA (Gary D. Sinclair)

429. BORCHARDT, Wallace J. Biomechanical analysis of a dislocate. M.P.E., 1976, 178 p. (K. D. Coutts)

5 male university age gymnasts completed 3 trials of a dislocate on the still rings. A synchronized film and force analysis of the performances was done using a single camera perpendicular to the plane of action and force transducers placed in series with the cable supporting each ring. A no. of dependent variables were obtained from this analysis and correlated with a ranking of the performances by a panel of experts. The rank order rs indicated that total range of angular displacement of the ring cable, time between the 2nd and 3rd force peaks, angular displacement of rank cable during the 2nd and 3rd force peaks, kipping angle of the hips, and the amount of vertical drop of the hips in preparation for the kipping phase were poor

predictors of the judged quality of performance. Better performers had higher upward force and a greater rise of the hips over that of the ankles during the kipping phase.

430. GOODMAN, David. The repetition effect in short term motor memory retrieval. M.P.E., 1975, 105 p. (R. W. Schutz)

A theory of information storage and retrieval of a simple motor task as an explanation of the repetition effect (RE) in a 2-choice RT task was investigated. Subsidiary problems involved examining the effect of inter-trial interval (ITI) on RE, examining the effect of probability (P) of occurrence of an S-R pair on the RE, and examining the interacting effects of ITI and P on the RE. 16 students and staff of UBC served as Ss (10 male, 6 female, $\overline{X}$ age = 22.5 yrs). The exp task was a 2-choice RT task where the S had to respond as quickly as possible by depressing a response key following the onset of a stimulus light. 2 types of tasks were used: self-paced (ITI = 380 msec) and discrete (ITI = 1600 msec). Each S was tested in both tasks and on all 3 probability conditions (p = .33, .50, .67). Results, as analyzed by a 2 X 3 X 3 repeated measures ANOVA, indicated that there was no RE in either the discrete or serial CRT task. This suggested that there were no differences in the Ss' response strategies in either the discrete or serial task. The model of motor memory retrieval was not supported by this investigation.

431. HARTLEY, Sandra J. A comparison of six methods of stretch on the active range of hip flexion. M.P.E., 1976, 93 p. (K. D. Coutts)

Female university age PE students (N=140) were assigned to 6 exp treatment groups and 1 control group. The exp groups each received 3 wks of different flexibility exercises, 3 times/wk with 10 min for each exercise session. The 6 exp conditions included prolonged stretch, a relaxation method, passive PNF, ballistic and hold, and passive lift-active hold exercises. Active range of hip flexion using a Leighton flexometer and hip flexion strength were measured before and after the 3 wk period as well as the first day of each wk during training. A multivariate ANOVA and pre-planned orthogonal contrasts indicated that all groups, including control, increased in active range of hip flexion ($p < .05$). Active stretching methods did not contribute significantly better to active range over passive methods, and the active PNF was not better than the ballistic and hold method. The relaxation method produced a greater increase ($p < .05$) in active range of hip flexion in comparison to other passive techniques, and no differential effects on strength of hip flexion were noted between all groups.

432. JICKLING, Robert J. The effects of arousal induced by physical exertion upon mental performance. M.P.E., 1976, 87 p. (G. D. Sinclair)

The effect of physical exertion upon mental performance and the nature of the relationship between physical exertion and mental performance were determined. 20 male students residing in campus dormitories volunteered as Ss. Varying degrees of physical exertion were induced by bicycle ergometer riding at a rate of 50 rpm with a resistance of 4 kg. Treatment conditions of 0, 2, 4, 6, and 8 min of riding were randomly assigned to each of 5 consecutive days. On completion of each daily exercise bout, each Ss was required to listen to a list of random numbers, prerecorded at 1 sec intervals, with the objective of detecting a sequence of digits which occurred in the order "odd-even-odd" and to respond "yes" before the next digit was presented. The test consisted of 150 digits and the score was the no. of series correctly identified out of a max of 28. Data were analyzed with an ANOVA for a 5 X 5 Greco-Latin square to test for the effects of the exercise treatments and their order, the days of testing, and the different tests of mental performance. The results, although not significant, indicated that physical exertion had a positive effect upon mental performance but that the effect cannot always be described by a simple inverted U relationship.

433. MACKENZIE, G. Robin. The relationship between high density living and fitness performance of elementary school age children. M.P.E., 1976, 86 p. (H. D. Whittle)

434. MARKON, Phillippe J. Changes in blood glucose and physical work capacity after heat dehydration. M.P.E., 1975, 93 p. (K. D. Coutts)

Male university age wrestlers ($\underline{N}$=7) underwent a 4% lean body wt loss due to heat dehydration on 2 separate occasions followed by a 4 hr period of rehydration. Rehydration consisted of tomato juice in 4 equal volumes taken at the start of each hr. Total volume was either 50% or 100% of the wt loss. 6 sets of tests were administered on each of the 2 days; 1 set before dehydration, 1 set after, and 1 set at the end of each of the 4 hrs of rehydration. Each set consisted of a 12 min, PWC_{150} bicycle test with determination of V_E, VO_2, HR, RQ and true O_2, and blood glucose from a fingertip sample. ANOVA indicated significant ($\underline{p} < .05$) changes over time for all dependent variables, except VO_2; between levels of rehydration for wt; and levels of rehydration by time interaction for true O_2 and wt. The $\underline{r}$ between blood glucose and PWC_{150} was not significant. There was a $\bar{X}$ decrease of 30% in PWC after dehydration with only 40% of the loss recovered during rehydration and nc significant difference between level of rehydration.

435. MC NULTY, Patricia M. Legal liability of the physical educator in Canada. M.P.E., 1975, 156 p. (R. F. Osborne)
Legal decisions of the Canadian courts in litigation concerning tort liability of the PE teacher and coach were examined and interpreted with a view to establishing problem areas and general principles. Research was carried out principally in the Law Library of the UBC. Where necessary, consultation with appropriate judges and lawyers was arranged. The major technique involved in analyzing the data was in legal terms, "briefing a case." Presentation of the data was in the form of rulings of the courts pertaining to the text of the thesis. Stated briefly, the following 5 conclusions relating to the tort of negligence were identified as being significant: By statute and common law, the teacher stands in loco parentis to his students. If a teacher is acting within the scope of his duty at the time of the alleged negligence, in most cases he can look to the School Board's insurance policy for protection. It is the duty of the local School Board to take care of equipment and facilities. The teacher cannot delegate his responsibility for supervision. The PE teacher should be sure that he is covered for $1 million for general liability and an equal amount for transportation liability if a private car is used for transporting students.

436. MISCISCO, Daniel R. The influence of distinct coaching styles on personality and sportsmanship attitudes of elementary age girls playing competition basketball. M.P.E. 1976, 165 p. (G. Pennington)

UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA (Mary Lou Norrie)

437. AMUCHIE, Fidelis. Male undergraduate subcultural participation in the intramural sports program at the University of California, Berkeley. Ed.D., 1974.

438. DAWKINS, Tanako H. Some consequences of a three factor theory of reminiscence in a gross motor task. Ph.D. in Education, 1973, 62 p. (M. L. Norrie)

439. DOBBINS, David A. The attention theory of two choice discrimination learning as applied to the perceptual-motor learning of educable mental retardates. Ph.D. in Special Education, 1974, 106 p. (G. L. Rarick)

440. KING, Rosemary L. The effect of the length of standard presentation on intravariance and constant error for a kinesthetically monitored force reproduction task. M.A. in Physical Education, 1974, 48 p. (M. L. Norrie)

441. SANDER, Erika. *Age and sex differences in performance, learning, and retention of a simple and complex coincident timing task performed by educable mentally retarded children*. Ph.D. in Education, 1974, 83 p. (D. B. Van Dalen)

442. WALSH, Joseph A. *The effects of degree of original learning of a gross motor task on inter-task transfer of learning*. Ed.D. in Higher Education-Physical Education, 1973, 77 p. (G. L. Rarick)

UNIVERSITY OF CALIFORNIA
DAVIS, CALIFORNIA (Jeanie Sherwood)

443. GLENN, John T. *Influence of resultant achievement motivation and expectation of success on performance of a simple motor task*. M.A. in Physical Education, 1976, 53 p. (E. Dean Ryan)

444. O'BRIEN, Roxanna S. *A comparative investigation of bicycling and jogging as modes for altering cardiorespiratory endurance capacity*. M.A. in Physical Education, 1976, 50 p. (J. H. Wilmore)

445. STREMEL, Richard. *Dynamics of the cardiorespiratory response to exercise with special reference to stroke volume*. Ph.D. in Physiology, 1975, 130 p. (E. M. Bernauer)

446. VODAK, Paul Anthony. *The relationship between leg strength and the onset of anaerobic metabolism during continuous bicycling exercise with increasing workloads*. M.A. in Physical Education, 1976, 35 p. (J. H. Wilmore)

447. WADE, Charles. *Responses of competitive swimmers to cold water at rest and during swimming*. M.A. in Physical Education, 1975, 70 p. (E. M. Bernauer)

448. WILLIAMS Craig I. *Diving reflex during exercise in man*. M.A. in Physical Education, 1976, 65 p. (E. M. Bernauer)

UNIVERSITY OF COLORADO
BOULDER, COLORADO (Dale Mood)

449. ALEXANDER, Robert. *Play, I-level system and interpersonal maturity*. M.S. in Physical Education, 1976, 97 p. (M. Banks)

450. COLLINS, Stephanie. *Physiological adaptations of women to controlled-breathing interval training*. M.S. in Physical Education, 1976, 98 p. (K. Sparks)

451. CRESPIN, J. Levi. Minorities in junior college, college, and university physical education and recreation faculty positions in the State of Colorado. M.S. in Physical Education, 1976, 65 p. (M. Banks)

452. HO, Linda. The effects of relative frequency of knowledge of results on the retention of a motor skill. M.S. in Physical Education, 1976, 68 p. (J. Shea)

453. HUFF, Carlton. An electromyographic study of selected muscles used in the tennis serve by skilled and unskilled male players. M.S. in Physical Education, 1976, 89 p. (E. Haymes)

454. KIRK, Constance. The effect of the relaxation response on trait anxiety. M.S. in Physical Education, 1976, 40 p. (E. Haymes)

455. MORROW, James. The effects of response position and item simplicity on the factorial structure of teacher evaluation forms. Ph.D. in Education, 1976, 132 p. (D. Mood and K. Hopkins)

456. ROSENSTEIL, Kelly. Ski tourers' perception of the environment at three Colorado sites. M.S. in Physical Education, 1976, 71 p. (M. Banks)

457. SCHANBACHER, Sherron. The effects of massed versus distributed mental practice on an unfamiliar task. M.S. in Physical Education, 1976, 48 p. (J. Shea)

458. VITALE, Mary. A comparison of knee stability related to skeletal maturation of the knee among male and female skiers, swimmers, and non-athletes. M.S. in Physical Education, 1976, 41 p. (J. Hall)

UNIVERSITY OF CONNECTICUT
STORRS, CONNECTICUT (Thomas J. Sheehan)

459. BERGER, Wilfred R. The effect of competition on the self concept, peer social acceptance, and work productivity of mental retardates in vocational training. Ph.D. in Education: Supervision and Curriculum Development, 1976, 146 p. (H. F. Fait)

Selected effects of participation in a specific form of sport competition were investigated. 120 mentally retarded clients in training at a vocational workshop were randomly selected and assigned into 1 exp group (E1) and 2 control groups (C1, C2). Each group of 40 Ss was equally divided by sex. E1 competition consisted of sprinting 25 yds establishing a winner and a loser. C1 sprinted 25 yds individually without competition. C2 received no treatment. All Ss were pre- and posttested on each dependent variable (self concept, peer social acceptance, and work productivity) during 2 wk periods preceding and subsequent to treatment sessions. A 3 factor ANOVA repeated on 1 measure was computed on the pre- and posttest data to test the effects of the treatment on each of the dependent variables. Results indicated that participation in competition had no significant effect on the self concept. Social acceptance and work productivity of Ss improved as a result of participation in competition. No significant differences were obtained between sexes on any dependent variable. It was concluded that the self concept of mental retardates does not appear to be affected by participation in competition or by the outcome of competition, i.e., winning and losing. Participants become more socially accepted by their peers with winners proving more acceptable than losers. Participants in competition improve their rate of work productivity.

460. MEYER, Linda R. The effects of two competitive situations on the selected gross motor performance of emotionally handicapped children. Ph.D. in Education, 1976, 78 p. (H. F. Fait)

Research indicated that performance could be affected by the structure of competitive situations. A sample of 50 emotionally handicapped boys, ages 9-14, were randomly selected to run an obstacle course under 1 of 3 treatment conditions, a self-competitive, individual competitive, or non-competitive situation. Ss were allowed to learn and practice running the course during PE classes preceding the exp. Performance, as measured by the time each S took to complete the course, was the dependent variable and competitive situation and winning and losing were the independent variables. A 1-way ANOVA and t tests were used to analyze the data. Results showed that both participation in the self-competitive situation and winning in the individual competitive situation significantly enhanced performance more than no competition ($p < .05$) while there was no significant difference between losing in the individual competitive and non-competitive situations ($p < .05$).

461. MURRAY, Mildred C. The relationship of attitudes toward achievement of elementary school girls and participation in educational sport. Ph.D., 1976, 124 p.

Educational sport, the independent variable, is a structured teaching process or method through which sport activities are modified to facilitate not only cognitive and psychomotor learnings but also learnings within the affective domain which contribute to the pupil's socialization. The student sample population consisted of 212 1st and 2nd grade girls in the PE classes of 3 volunteer teachers from 4 ELE schools. Ss were administered a pretest prior to the manipulation (educational sport) and a posttest at the conclusion of the study (3 mo time period). The test administered to the Ss was Adkins and Ballif's Animal Crackers, a measure of achievement motivation. A repeated measures ANOVA was employed to determine if attitude toward achieving (dependent variable) was significantly increased during the manipulation of educational sport. The statistical analysis indicated an increase in the students' $\bar{X}$ performance between the pre- and posttests ($p < .001$). These results established a relationship between attitude toward achieving in young girls and their participation in the attitude change model of educational sport.

462. SHASBY, Gregory B. The flexibility response of young and elderly subjects to an eight week program of static stretching exercises. Ph.D. in Physical Education, 1976, 94 p. (H. Fait)

To fully examine the relationship of exercise to elderly flexibility, an elderly group (32 females, 61-78 yrs of age) were compared to a SHS group (29 females, 14-18 yrs of age). Ss were randomly assigned to 1 of 3 groups: exercise group 1, 3 days/wk; exercise group 2, 2 days/wk; control group, no exercise. The exercise groups utilizing static stretching exercises, followed a 30 min session progressive exercise program for 8 wks. Flexibility measurements were taken on shoulder, hip, and ankle flexion-extension prior to the exercise program, after 4 wks of exercise, at the end of 8 wks of exercise, and 4 wks post exercise to measure retention. A repeated measures ANCOVA was used to analyze the data using the pretest data as the covariate to equalize initial differences between the young and elderly Ss. A Tukey post hoc analysis was used to analyze significant results yielded by the ANCOVA. Results of the study indicated that both young and elderly Ss responded in a similar manner to the static stretching exercises with significant ($p < .05$) improvement in the joints measured. No significant differences were noted between the 2 exercise frequencies or between the end exercise and posttest results.

UNIVERSITY OF FLORIDA
GAINESVILLE, FLORIDA (O. Holyoak)

463. BELL, Thomas H. Jr. The status of health education in the public high schools of Florida, Grades 10, 11, and 12. M.A. in Health Education, 1974, 88 p. (D. Hicks)

The status of HE in the FL public SHS, grades 10, 11, and 12, is presented. Survey questionnaires for the school HE coordinator and for the HE teacher were constructed and mailed to 77 FL public SHS. Responses received from 55 schools (71.4%) provided data for the study. HE coordinators verified their appointments in 37 of the 55 schools (67.2%), but indicated that they are provided little or no school time in which to carry out their functions. Separate HE courses are offered in 35 schools (63.6%), and 8 schools require the course for 10th grade students only. 61 special HE teachers serving 47 schools completed the HE teacher's questionnaire. Only 36 of these HE teachers (60.0%) reported that they are certified to teach HE in FL, and only 3 teachers hold degrees in HE. Of the 61 HE teachers slightly over 1/2 hold degrees in PE. Teachers reported that HE classes are usually coeducational, of average class size, meeting daily in semester blocks for 1/2 unit of credit. Teachers usually develop their own courses of study, engage in little or no cooperative planning with other school or community representatives, and make limited or no use of available pupil information or conditions of school and community environment. Content areas emphasized in HE curricula include: safety and first aid, alcohol and drugs, and venereal and other communicable diseases. Areas given least emphasis include: HE careers and international HE. It was recommended that comprehensive HE programs should be offered in all of the FL public SHS to meet the requirements of the FL Comprehensive Health Education Act of 1973, and that learning experiences should be made more relevant by inclusion of techniques promoting problem solving and decision making. Teacher certification in HE should be upgraded to meet at least the minimum standards of a quality professional level, and more HE teachers with major specialization should be employed in the SHS. HE coordinators should be designated in each school and should be given some school time in order to perform their duties.

464. CALDWELL, Michael D. *Relationship of oxygen used in training to performance of well-trained runners*. M.A. in Physical Education, 1975, 56 p. (C. Zauner)

The effort spent in training as indicated by the amount of O_2 consumed during training is related to subsequent competitive performance. *Ss* were 8 succesful well-trained male runners. O_2 uptake (VO_2) was determined by having each *S* run on a motor-driven treadmill. Expired air samples were collected using a modified Douglas bag method. O_2 uptake was measured at speeds of 5.0, 7.5, 8.6, 10.0, 12.0 and 15.0 mph. Max O_2 uptake was determined while running at 12.0 mph with progressively increasing grades. A cost of running graph was structured by using the VO_2 data collected at the 6 different speeds of running in order to plot VO_2 against running speed. From this graph, VO_2 per rate of speed tables were constructed estimating VO_2/min at 18 different speeds of running for each *S*. Total O_2 used per workout was determined by using information collected from training diaries provided by each *S* and from the VO_2 per rate of speed tables. *Ss*' running performances were assigned point values according to a computerized scoring table to describe the quality of varied track performances. Relationships among O_2 consumed during training, training mileage, and competitive performances were analyzed by the Pearson Product-Moment Correlation Coefficient. Results showed a high correlation ($r=.95$) between training mileage and O_2 consumed during training. The t test for independent samples was used to examine the $\bar{X}$ differences between the High Training Mileage and Low Training Mileage groups in O_2 consumed during training, training mileage, performance rating, and max VO_2. A statistically significant difference was observed in the $\bar{X}$ amount of training mileage between the 2 groups ($p < .05$).

465. CAVANAUGH, Sandra R. Analysis of selected physical parameters and professed self-image as related to personality types. M.A. in Physical Education, 1974, 107 p. (O. J. Holyoak)

The personality types of female and male SHS students as related to circulorespiratory endurance, flexibility, strength and professed self-image were compared. Ss were 134 female and 112 male students enrolled in Andrews University Academy in Berrien Springs, MI. Data were analyzed on the basis of the Jungian preferences and personality types as measured by the Myers-Briggs Type Indicator. Statistical significance was found between strength, a physical parameter, and selected personality types of females. No statistical differences on the other physical parameters were found among females and males when compared by personality types. The results of the statistical analyses indicated that significant ($p = .05$) differences existed between professed self-image and selected personality types for both females and males.

466. CRESSMAN, Michael E. Biomechanical analysis of racquetball kill techniques. M.A. in Physical Education, 1976, 65 p. (D. Kaufmann)

The purposes were: compare through cinematography the biomechanical variables used in performing the flexion-extension and straight-arm kill in racquetball; investigate the ball velocities produced by the 2 techniques; determine the accuracy of the techniques; investigate the time needed to execute the particular method. 6 high skilled, male Ss were filmed performing the front-wall kill in a 3-wall racquetball court. 2 16mm LOCAM cameras, one located at court level and 1 directly over the S, were filming at 150 fps. 12 descripitive and 8 quantitative variables were analyzed through use of a Recordak Film Analyzer. Results indicated that greater ball velocities were acheived using the flexion-extension method. This technique also resulted in less time to execute the downswing, less time to complete the shot and greater forces being applied to the ball. Results of the *t* test for dependent samples revealed no statisticaly significant differences between any of the variables investigated. Stride lengths were found to be greater for the straight-arm trials. *Ss* average stride was 45% of the standing ht for the flexion-extension method and 50% for the straight-arm technique. It was concluded that the flexion-extension technique produced greater ball velocities, applied forces and less time to execute the shot. Further, the no. of trials executed showed both techniques to be equally accurate. It was also concluded that stride length contributes little to the force applied to the ball.

467. DAVID, Deborah S. *Jubilation: A choreographic work to music from Stephen Schwartz's Godspell*. M.A. in Physical Education, 1975, 149 p. (O. Holyoak)
Premise of the dance composition was to objectify in movement the moods projected by the integration of music and lyrics within the overall atmosphere of a stylized religious service. 6 excerpts were selected from the musical score of Stephen Schwartz's *Godspell* and placed in a sequence to accentuate the religious theme. The composition was structured in suite form composed of the following sections: Processional, Bless the Lord, Reflections, The Sermon for this Evening is . . ., Light of the World, Ascension and Praise. The choreographic movement was primarily in the jazz idiom with contemporary and lyrical dance styles also used. The movement was structured to meet the context of a 3/4-round stage and the costuming and lighting were designed to accentuate the moods and theme of the choreographic work. The composition was presented in a public concert in the Reitz Union Ballroom of the UF by a cast of 8 dancers selected from the UF Dance Company.

468. DILLON, Paula Z. *Cinematographical analysis of female gait with reference to chondromalacia patellae*. M.A. in Physical Education, 1976, 123 p. (W. Updyke)
The gaits of college-age women diagnosed as exhibiting symptoms of chondromalacia patella (CP) were analyzed and compared with the gaits of college-age women without CP symptoms. Of the 19 *Ss* filmed, 11 had normal knees, while 8 were symptomatic of CP. 2 high-speed 16mm cameras filmed *Ss* from the front and side at 64 fps as *Ss* walked on a treadmill at 2.5 mph. *Ss* were filmed on the level and at a 15^{o} downhill slope. The variables analyzed were categorized as follows: knee flexion extension, ankle flexion extension, vertical deviation of the anterior superior spine of the ilium, lateral deviation of lower leg during swing phase, lateral femorotibial angle (as filmed from the front), transverse pelvic rotation, and transverse femoral rotation. The *t* test was used to analyze the data. CP *Ss* were found to have significantly less flexion at the knee on the

level and slope during the singular support phase. Increased outward femoral rotation was detected in CP Ss during swing phase on the level and slope ($p < .05$, $p < .10$, respectively). The fluctuation between frames or absolute movement during the swing phase was significantly greater in CP Ss. A radical inward femoral rotation occurred in CP Ss immediately preceding heel strike ($p < .01$).

469. KUHNKE, Christine J. The effectiveness of movement education as a perceptual-motor tool. M.A. in Physical Education, 1975, 60 p. (H. Lerch)

A determination was made of whether a perceptual-motor (PM), movement education (ME), or a traditional PE program would bring about the greatest improvement in the PM skills of children. A subpurpose was to investigate the differences between ME and PM programs. 4 classes of 115 kindergarten and 1st grade students served as Ss. Each class received PE instruction in 1 of the following manners: ME, a PM program, and a traditional PE program. The 4th group served as a control. Groups received their respective treatments 3 times/wk for 25 min sessions for 8 wks. Selected parts of the Southern California Sensory Integration Tests were administered to all Ss on a pretest-posttest basis. Using MANOVA, results were not significant at the .05 level of confidence.

470. LEWIS, Charlene L. An assessment of the effectiveness of a competency-based curricular model in physical education in a middle school. M.A. in Physical Education, 1975, 75 p. (O. Holyoak)

The PE program at a middle school in FL and its effects on learning by the students as related to stated program goals was evaluated. The Lewis Classification System Check List, an instrument developed by the investigator, was used to mark observed critical incidents of overt behaviors manifested by 3 male students enrolled in PE at the school. 3 trained observers determined the responses that were made by the Ss of a cognitive, psychomotor, or affective nature. Results showed that the time spent by Ss attempting to learn was reasonable. The major portion was a psychomotor nature whereas cognitive and affective were limited. The lack of negative interference by peers in the S's learning pattern was significant and demonstrates a strength in the use of a competency-based model.

471. MC CASKILL, Cornelia B. Survey of practices and perceptions of school health services in the elementary school of Alachua County, Florida. M.A. in Health Education, 1974, 138 p. (D. Hicks)

The HE services program in the ELE schools of the school district according to established criteria, and the practices and perceptions of principals, teachers, and parents regarding these services was described. 3 separate survey questionnaires were administered to 17 principals and 400 teachers in the 19 public ELE schools in the co., and to 500 parents who were associated with 6 of these schools. Data were coded, analyzed with SPSS, and then interpreted according to established criteria for school HE services. Findings: The various aspects of the overall programs of HE services in the ELE schools conformed in general with established criteria, however incomplete the programs may have been; parent perceptions of the school HE services and procedures, limited contact with services personnel, but generally supportive of school concern and provisions for the children's health; there was divergence in the administrative practices of providing school HE services as reported by principals, and in the implementation of these practices as perceived by teachers. There seemed to be a substantial need for additional assistance from HE services personnel serving the schools in order to achieve recognized goals.

472. MC GINNIS, Richard A. A kinematical analysis of a one-hand jump shot in basketball. M.A. in Physical Education, 1975, 54 p. (D. Kaufmann)

Descriptive and quantitative variables of the 1-hand jump shot in basketball as demonstrated by highly skilled and moderately skilled male Ss were analyzed and compared cinematographically. 3 volunteers, 2 highly skilled and 1 moderately skilled shooters, were filmed by 2 16mm cameras (64fps) from the sagittal and frontal planes of action as Ss shot an average of 5 shots each, of which 4 were analyzed. All jump shots were taken from a distance of 502.92 cm from the center of the basket and 168. 81cm from the edge of the baseline at an angle of 1° from the horizontal. 9 descriptive and 7 quantitative variables were analyzed individually as the film was viewed on a data analyzer projector. Results indicated that the ht of jump during the act of shooting has no significant value and is an individual factor. The 2 highly skilled Ss demonstrated pointing the elbow toward the target whereas the moderately skilled violated this aspect. The highly skilled demonstrated greater angular rotation of the hand about the wrist joint. It was concluded that skilled shooters demonstrated a greater magnitude of follow-through, greater wrist hyperextension and flexion during release of the ball, released the ball before the peak of the jump was achieved, and that the success of the jump shot was probably not determined by any single factor or simple combination of factors.

473. MONAHAN, Jane A. Relative effectiveness of film and simulated model on the acquisition of the breast self-examination skill by university women. M.A. in Health Education, 1975, 50 p. (B. Smith)

The effectiveness of 2 instructional tools for teaching breast self-examination (BSE), a motion picture film and a simulated breast model, was examined. It was hypothesized that both techniques would be successful, but the model would be more effective because it used the visual, auditory, and tactile senses, and offered an opportunity for practice, while the film used only the visual and auditory senses. Invitations were sent to 140 randomly chosen women living on the UF campus. The 1st 69 respondents were then randomly assigned to 1 of 3 equal groups: Ss who were individually instructed by a 10 min film entitled Teaching Breast Self-Examination, Ss who were given a 5 min lecture-demonstration on the breast model known as "Betsi," coupled with 5 min of practice, and control Ss who received no instruction. Each S was then rated on her ability to perform a BSE by 2 trained observers who used an instrument developed by the author which consisted of a checklist of the behaviors which constitute BSE. In addition, raters gave a subjective evaluation of the performance. ANOVA on the checklist scores showed a significant difference at the .01 level between the control group and both groups that received instruction. This would imply that although much information is available though the mass media individual instruction is needed for this population. ANOVA did not show a significant difference in learning between those who saw the film and those who used the breast model. It is concluded that for this population women learn as effectively from passively watching a film showing a live model performing BSE as they do from watching a live demonstration on a model and practicing. Significant X^2 ($p <$ .01) on the qualitative scores supported the above conclusions. It was recommended that for this population selection of methods for teaching BSE should be based on size of group, availability of equipment, and finances.

474. MORRISON, Patricia A. Radiological practices and protective measures utilized by dentists of Alachua County, Florida. M.A. in Health Education, 1975, 97 p. (D. Hicks)

Radiological practices and preventive measures being used by dentists in a FL co, according to recommended procedures for reduction of exposure to both the patient and the operator during radiography were surveyed. Data were collected by use of a structured 36-item questionnaire administered to 31 dentists at the Jan. 1974 meeting of the Alachua County Dental Association. The majority of the dentists were under age 45, were non-specialists, and had graduated from dental school since 1960. Approximately 1/3 rated their undergraduate curriculum as adequate in all phases of dental roentgenology. Within the past 2 yrs, most had attended a continuing education course or seminar including radiology, and they reported overwhelming suppor for more such locally sponsored opportunities. Findings indicated that many protective concepts espoused by the National Council on Radiation Protection and the American Dental Association are being used by these dentists. Most X-ray machines used in dental offices are not panoramic, but have variable millampere control, and the radiographs are exposed at the recommended 90-100 KVp. The most common cone design used is the open-ended circle which is lead lined. Lead protective aprons, adequate collimation, fast speed film, and adherence to complete developing techniques are regularly used. Scattered radiation exposure is not monitored generally. The majority of radiographs are not done by the dentists, and full mouth radiographs are not done routinely for all new patients, or done annually for all regular patients. Records are not made of patient exposure time, nor of the daily output workload in milliamperage sec of the X-ray unit. Protective barriers in radiographic rooms are concrete or lead walls. It was concluded that improvement could be made in the areas of filtration, kilvoltage levels used during exposure, and in the replacement of conventional units with panoramic machines. It was shown further that the dentists should be more aware of the protection used by the auxilliary personnel, the protective barriers employed, and the evaluations made of X-ray machines.

475. RHINE, Helene T. The Lady Gator track team: An anthropological study. M.A. in Physical Education, 1975, 87 p. (H. Lerch)

The 1974-75 varsity women's track team at UF was described using standard anthropological terms and concepts. Areas of investigation are the social organization of the group, its routine, rituals, roles, and initiation rites. The participant observation method of research was used. The researcher spent 6 mos observing the repeated activity of the group. Daily team practice beginning in Nov., 1974 and ending in May, 1975 was attended by the researcher. Also observed were all of the team's 8 scheduled track meets. The final report includes a discussion of the roles of the coach and team captain; description of practice routines, pre-meet and meet activities and identification of subgroups. It also discusses methods of entering and leaving the group. The descriptions reported in this investigation apply only to the varsity women's track team at UF, 1974-75. There is no implication that these phenomena are found in other women's track teams.

476. ROBERTS, Karen A. Norms and prediction equations for body composition in children, grades one through eight. M.A. in Physical Education, 1976, 104 p. (D. Kaufmann)
Prediction equations and norms for lean body wt for children, grades 1-8 were determined. Total body potassium, lean body wt, and % of lean body wt were determined in 100 boys and 67 girls. A 4-Pi liquid scintillation whole-body counter was used for lean body wt determination. These Ss and an additional 40 boys and 70 girls were measured in 17 anthropometric sites. Norms were established for lean body wt, % lean body wt, and all 17 anthropometric measurements. 2 prediction equations, 1 for boys and the other for girls, were calculated by stepwise regression to predict lean body wt from the 17 anthropometric measures for use in the public schools. Differences beyond the .05 level of significance were found in % of lean body wt between girls and boys and between blacks and whites. Sex and race differences were also found in several specific anthropometric measures.

477. ROSWAL, Glenn M. A cinematographic analysis of one-handed and two-handed tennis backhand strokes. M.A. in Physical Education, 1974, 98 p. (D. Kaufmann)
Descriptive and mechanical variables of the conventional 1-handed backhand stroke and the 2-handed backhand stroke in tennis were analyzed. Ss were 2 male college tennis players on UF tennis team. 3 high speed 16mm cameras filmed Ss, each hitting several cross-court and down-the-line drives into a designated target area. To provide a means of comparison, 2 descriptive and 24 quantitative variables were analyzed. Results that disagreed with the literature were: there was movement of the wrist, as opposed to locked wrist, at contact; the Ss employing the 2-handed backhand stepped toward the departing ball line instead of using a large cross-over step; the ball was contacted behind the front foot in the down-the-line drives, rather than in front. The angular velocities and accelerations of the racket, as well as all departing ball velocities, were greater for the 2-handed backhand. The angle of incidence of the oncoming ball did not equal the angle of reflection of the outgoing ball.

478. STUMPE, Jill. Physiological response to exercise in college-age females during prolonged use of an oral contraceptive. M.A. in Physical Education, 1975, 76 p. (C. Zauner)
Effects of a chronically used oral contraceptive on the physiological response of college-age females to exercise were evaluated. 5 college-age females from UF, who had not previously used an oral contraceptive, volunteered for the study. Ss were measured by means of the Monark bicycle ergometer for PWC_{170}.

On a separate day, HR at a 5% treadmill incline at 3.5 mph, and Max VO_2 were estimated. The exercise task for these latter 2 measures was the Balke Treadmill Test. A modified Douglas Bag technique was employed to gather expired air. All tests were administered prior to initiation of oral contraceptive therapy. Body wt, resting HR, and BP were recorded before each test. Tests were repeated on the 3rd and 5th wk of drug use. Data were analyzed with ANOVA for repeated measures. The PWC_{170} became significantly reduced with chronically used oral contraceptives ($p < .01$).

479. TESTA, Steven F. A biomechanical analysis of the running sprint stride and head-first dive methods of reaching first base. M.A. in Physical Education, 1976, 68 p. (D. Kaufmann)

The purposes were to: biomechanically analyze the running sprint stride method and the head-first dive method of reaching 1st base, determine the difference in time elapsed between the 2 methods of reaching 1st base. 1 LOCAM 16mm camera filmed Ss (N=4) from the side (80 fps) as each S performed 6 trials of hitting a pitched ball, using the running sprint stride method to 1st base in 3 trials and the head-first dive method in 3 trials. Each trail was electronically timed by a micro-timer (1/100th sec) and film data were analyzed by a Recordak Film Analyzer, coordinates were digitized, a[illegible]riables determined by a computer program. To provide a means of comparison, the variables analyzed were the center of mass of Ss when contact was made with 1st base, the average velocities of Ss at contact with 1st base using both methods of reaching 1st base, the velocity at toe-off into last stride, and max forward trunk lean of Ss and forward trunk lean 4.57 m (15 ft) from 1st base. Results indicated that in the head-first dive, when using the center of mass as the criterion, Ss had a shorter distance to travel to 1st base than the stride method, due to the full extension of the body in a horizontal position when contact was made with 1st base. On the other hand, Ss slowed down when diving into the base because of the contact made with the ground before touching the base. These observations, in effect, counteracted each other. There was significant measurable time saved with the head-first dive due to the shorter distance traveled, but there was an even greater loss of time as a result of the friction created by diving into the base.

480. WISEMAN, William D. An analysis of comprehensive health knowledge and application of selected seventh grade public school students in Alachua County, Florida. M.A. in Health Education, 1976, 124 p. (S. Fagerberg)

The level of comprehensive HE knowledge and application among a statistical probability sample of 7th grade male and female students from a co. public school system in FL was analyzed and evaluated by comparison with that of a national sample which reflected the standardized norms for the test instrument used. Data were secured by administration of a current, nationally published, 60-item multiple-choice test of comprehensive HE to 220 Ss representing a local sample approximately equal to, but not less than, 10% of each existing public school 7th grade population in Alachua Co. at the time of the test procedure. When the t test was applied to the 2 obtained $\bar{X}$s for each sex, the difference between the local and national $\bar{X}$s was found to be significant for both males and females at a .01 level. Through use of X^2, an item analysis was conducted to determine those questions and HE content areas on which the results of the local sample differed significantly from the national norms. Results showed that local samples scored significantly lower at the .05 level on many of the 60 test items. Local males scored lower on 21 of 60 (35%); local females scored lower on 27 of 60 (45%); and the local combined total sample scored lower than the expected or national sample on 31 of 60 items (52%). Weaknesses, interpreted as those HE content areas in which test groups scored significantly lower on at least 1/2 of the topic-related test items, were indicated among the local male, female and total test samples. It was recommended that: more and better comprehensive HE programs should be offered in all Alachua Co. ELE and secondary schools; HE planners should be encouraged to provide a broader base of HE content for the school curriculum; if a need for more or better qualified teachers of HE exists, provisions should be made to satisfy that need; and HE should be considered and actively supported as an important and integral part of the total school program.

UNIVERSITY OF GEORGIA
ATHENS, GEORGIA (Robert T. Bowen, Jr.)

481. WEINER, Andrew I. Group recreation activities as a therapeutic variable in the rehabilitation of institutionalized youthful male offenders. Ed.D. in Recreation, 1976, 188 p. (R. T. Bowen, Jr.)

The social behavior of 5 institutionalized youthful male offenders, (ages 14-16) was investigated prior to, during, and following a 15 day joint rec counseling treatment program. An exp case study approach, designed to examine each S on an individual basis, was used. 59 repeated measures, in the form of daily classroom observations, constituted the baseline, treatment and reversal periods of the investigation. Social behavior appearing in the classroom was operationalized into target behaviors so that the frequency of their daily occurrence could be systematically recorded and graphically depicted. Social behavior appearing outside the classroom was recorded through use of the self-appraisal and observer forms of the Jesness Behavior Checklist (JBL). An Integrated Moving Averages Model was used to statistically verify suspected changes in classroom behavior. 3 Ss demonstrated significant positive changes, at varying levels of significance, either during or following treatment. Results obtained from the JBL supported the findings obtained in the classroom.

UNIVERSITY OF IDAHO
MOSCOW, IDAHO (G. H. Porter)

482. KNICKREHM, Roxanne L. *The Margaria step test as a predictor of maximal oxygen uptake in young adult females.* M.S. in Physical Education, 1976, 55 p. (G. H. Porter)

The reliability, validity and % error involved in the prediction of max VO_2 were determined from data obtained from administration of the Margaria Step Test (MST) to 31 healthy females aged 18 to 24 yrs. Each S completed 2 trials of the MST and a max treadmill run test. The calculations of predicted max VO_2 were made by applying the MST formula using exercise HRs or recovery PRs in combination with either actual max HRs or an assumed max HR which was found to be 190 bpm (max 190 HR) for this group of Ss. Test-retest rs (MST) ranged from .73 to .94 ($p < .001$). Lower rs were associated with the use of recovery PRs. Validity coefficients ranged from .69 to .71 ($p < .001$) when the actual max HR was used in the prediction of max VO_2. The validity coefficients were only .45 to .49 ($p < .01$) when the max 190 HR value was used to predict max VO_2. The % error of the $\bar{X}$ difference between the predicted max VO_2 calculated from either the HR or recovery PR values and the directly determined max VO_2 was approximately ±10% when the actual max HR was known. When this same $\bar{X}$ difference was calculated from data using the max 190 HR, the % error exceeded ±10%.

UNIVERSITY OF ILLINOIS
URBANA-CHAMPAIGN, ILLINOIS (M. Ellis)

483. MEIER, Klaus V. *Authenticity and sport: A conceptual analysis*. Ph.D. in Physical Education, 1973, 302 p. (M. Ellis)

Currently the terms "authenticity" and "authentic existence" are frequently applied to numerous facets of contemporary life including man's participation in sport. The main task of the study was to conduct a comprehensive investigation of 4 specific sports (mountain climbing, skiing, surfing, and parachuting) to determine the contributions of man's participation to the attainment of authenticity. Due to frequent discrepancies in definition, a preliminary analysis was conducted of the concept as delineated in the major works of existential philosophers Heidegger and Jaspers. The most significant components of the derived concept of authenticity were critically investigated under the following categories: sport and death; sport and other boundary situations; sport, communion with nature, the experience of solitude, and communication with others; and sport, restoration, freedom, and meaning. The analysis included pertinent information derived from a study of the objective or situational characteristics of the sports, the experiential literature, and philosophic and psychological research studies. It was concluded that the 4 sports permit man to unearth insights into his being, perhaps previously obfuscated, and become fully aware of his possibilities, contingencies, and inexorable limits. Participation is conducive to the attainment of the awareness, if not indeed the actualization, of authentic modes of human existence.

UNIVERSITY OF IOWA
IOWA CITY, IOWA

(L. E. Alley)

484. BUFFUM, Edward F. Change in attitude of students toward physical conditioning: A comparison of two methods of teaching. Ph.D. in Physical Education, 1976, 261 p. (G. F. Hansen and W. J. Foley)

A Semantic Differential Instrument and a physical-fitness test were administered initially and finally to an exp group ($\underline{N}$=30 males) and a control group ($\underline{N}$=24 males) enrolled in physical conditioning classes at the U of Iowa. Student-initiated individual instruction and behavior objectives were used for the exp group; Ss in the control group were instructed in the traditional fashion. The Semantic Differential Instrument was designed to measure perceptions regarding 6 concepts (strenuous physical activity, knowledge testing, socio-psychological benefits, cardio-respiratory endurance, muscular strength, and importance of physical conditioning) from which the attitudes of the Ss were inferred. No significant differences in changes in attitude between the 2 groups were found.

485. CARLSON, Judith Strait. Contrasts: A dance in seven sections. M.A. in Physical Education and Dance. 1976. (M. D. Leslie)

Contrasts is a dance in 7 sections for 4 female and 2 male dancers. Each section has a definite style of movement, costume, lighting, and sound to show the idea of contrast in the elements of dance. Part I, Pomposo, is stately in movement and design. Part II, Allegro, is bright, elegant, and in constant motion. Part III, Tamara, moves into a modern jazz quality. Part IV, Wind, a duet, continues in a modern jazz vein with a feeling of tenderness between the man and the woman. Part V, Andante moderato, is quiet and elegant and starts the process of moving back to the original statement of the dance. Part IV, Jigg, is in the bright vein of the Allegro, with humorous interaction between the men and women. Part VII is a repeat of Part I, Pomposo, with the dance ending as it began. The dance was done in a preliminary performance in 1975, and the thesis performance was given in 1976. Both performances were danced by members of the Iowa Dance Company at the University of Iowa. Although not included as a part of the thesis, a videotape was made of the dance and a Labanotated score written according to the specifications of the Dance Notation Bureau.

486. CHANG, Cheng-ou. Effects of non-normality and sample size on effectiveness of significance test of difference between two independent correlation coefficients. Ph.D. in Physical Education, 1976, 117 p. (D. R. Casady, H. D. Hoover)

Using various established subroutines, and main source programs and affiliated subroutines developed by the investigator, random samples from normal bivariate populations and from various non-normal bivariate populations were generated by an IBM system 360/65 Computer. These data were used to describe the sampling distributions of the difference between the Pearson product-moment correlation coefficients of 2 independent samples drawn randomly from bivariate populations with 1 or both variates normally or non-normally distributed, to analyze the effectiveness of the significance test in controlling Type I errors, and to estimate the power of the test under the conditions described. The significance test investigated was

$$z = (z_{r_1} - z_{r_2}) / \sqrt{1/(n_1 - 3) + 1/(n_2 - 3)}.$$

Results showed that when the parent populations are normal in form, the sampling distributions of the difference between Fisher's z transformation of 2 independent Pearson rs conform closely with the normal distribution for values as great as .60. This is also true when the parent populations are non-normal in form, provided that the ρ values are equal to or less than .20. The significance test studied provides acceptable control over Type I errors when sampling from normal bivariate populations, but such control becomes less effective with increasing non-normality and magnitude of ρ values in the parent populations. The significance test exhibited acceptable power in all but 1 of the situations investigated, and manifested higher power, relative to expected power, for samples M = 10 than for samples M = 30 as the magnitude of ρ in the parent populations increased.

487. ERIE, Dennis O. A model for institutional appraisal of NCAA need plan for financial aid to athletes. Ph.D. in Physical Education, 1976, 127 p. (G. F. Hansen, L. E. Alley)

Using data obtained from NCAA publications, Bureau of Census Reports, college and university catalogs, Internal Revenue Service, College Scholarship Service, and the American College Testing Program, a model table was developed which institutions could use to assess the financial implications of athletic grants-in-aid if awarded under the provisions of the NCAA need (Flynn) plan. An estimate of the total family contributions toward room-and-board costs could be made by multiplying the value listed in the table which corresponded to the institution's room-and-board charge by the no. of athletes that were to receive financial aid. The model was tested using data taken from confidential financial aid forms supplied by the North Central Intercollegiate Athletic Conference. Results indicated that institutions in Division I of the NCAA with extensive grant-in-aid programs could save from 1/4 to 1/3 of total grant-in-aid costs by changing to the NCAA need plan. Institutions in Division I and Division II that awarded partial grants-in-aid would save little, if any, by changing to the NCAA need plan. Under this plan, insitutions with low room-and-board rates apparently would have a recruiting advantage over institutions with high room-and-board rates. Under the NCAA need plan, about 27% of the total group of athletes at any given institution would qualify for full grants-in-aid.

488. FITZGERALD, Sharon L. Sex role stereotyping in attitudes of junior high school students toward participation in sports activities. M.A. in Physical Education, 1976, 212 p. (N. P. Burke)

Each of 145 Ss responded to a series of verbally administered situational questions. An SPSS program yielded frequency distributions and % in addition to cross tabulations with X^2. Cross tabulations for the variables were made as follows: variable by grade, variable by sex, and variable by grade and sex. Within the limits of this investigation, the following conclusions were drawn: Attitudes toward acceptability and expectations of participation in sports activities were generally consistent throughout the grades. Attitudes toward acceptability and expectations of participation in sports activities generally differed according to sex in the total group. Some attitudes toward acceptability and expectations of participation in sports activities differed by sex at some grade levels.

489. LEAPLEY, Diana C. *The relationship of listening comprehension to acquistion of motor skills*. Ph.D. in Physical Education, 1976, 137 p. (J. L. Scahill)
101 JHS and SHS *Ss* were given the Brown-Carlsen Listening Comprehension Test and a novel task as the measure of motor performance. The novel task consisted of a movement sequence encompassing 3 original skills, designed by the author, incorporated with 7 basic locomotor movements. Analysis of data indicated: a low positive *r* between listening comprehension and movement performance, and between movement performance and IQ; no significant difference between males and females on listening comprehension, but females scored significantly higher on the movement sequence; and a high positive *r* between listening comprehension and IQ.

490. MARTIN, Robert K. *The effects of exercise on cellular activity, mineral composition, and architectural structure in canine bone*. Ph.D. in Physical Education, 1976, 207 p. (J. A. Maynard, J. P. Albright)
After 22 wks in cages to establish baseline values, 9 adult male Walker hounds were divided into 2 groups (Group I, *N* = 5, Group II, *N* = 4). Group I dogs were exercised 1 hr/day, 5 days/wk for 6 wks on a treadmill at 6 mph, 10% grade, while Group II dogs remained caged to provide control data for the exercise period. At the end of the 6 wks, the treatment for the 2 groups was reversed. At the end of each 6 wks, tetracycline-labeled bone biopsies, serum samples, and in vivo limb densitometry x-rays were obtained from each animal. Each biopsy was processed in an undecalcified state for quantitative estimates of mass and porosity, mineral content, active new bone cells, and resorption. Cell counts and serum concentrations of calcium, phosphorus, protein, and alkaline phosphatase were obtained from each blood sample. Tibial x-rays were computer analyzed for density. It was found that bone formation increased significantly with exercise and decreased with cessation. Significant increases were found in tibial density following both caging and exercise. No changes were noted in bone resorption, calcium and phosphorus content, cross-sectional area, porosity, body wt, serum calcium, serum phosphorus, alkaline phosphatase, protein, red blood cells, white blood cells, hematocrit, or hemoglobin. The importance of determining individual biological variations during a preliminary control period was established.

491. MELVILLE, D. Scott. *Test of motor schema theory: Performance of rapid movement task in absence of knowledge of results*. Ph.D. in Physical Education, 1976, 93 p. (J. F. McCabe)
The motor schema theories of Pew and Schmidt were tested.

15 male and 15 female volunteer Ss were randomly assigned to 5 exp groups (3 males and 3 females to each group), each of which performed 520 training trials (260 on each of 2 successive days) of a rapid MT task with KR. In the training trials, Groups 1 and 2 attempted to complete the task in 200 msec; Group 3, in 150 msec; Group 4, in 250 msec; Group 5 in 150 msec for 1/2 the trials and in 250 msec for 1/2 the trials. 1 wk following the training regimen, all Ss performed 60 criterion trials (200 msec) during which only the control group (Group 2) received KR. Ss made estimates of the accuracy of their performances during both training trials and criterion trials. Deviations fromthe criterion target were recorded (with respect to sign) to the nearest msec. Analyses of AE, CE, and VE for the criterion trials indicated that Group 3 (150 msec) began at significantly poorer level of performance, and became significantly worse during the trials, than the other groups. No changes in performance, differences in performance levels, or differences in estimates of accuracy occurred in any of the other groups. None of the findings could be interpreted as supportive or non-supportive of either Pew's or Schmidt's theories.

492. MILNER, E. Keith. A comparative study of leadership behavior of male and female heads of departments of physical education in universities and colleges. Ph.D. in Physical Education, 1976, 136 p. (G. F. Hansen, W. J. Foley)

Data were obtained via the Leader Behavior Description Questionnaire (LBDQ-Real) and the Ideal Leader Behavior Questionnaire (LBDQ-Ideal) from dept heads (DH) and faculty in 13 segregated depts with male DHs, 14 segregated depts with female DHs, 12 integrated depts with male DHs, and 10 integrated depts with female DHs. Data were analyzed to determine if sex and makeup of dept (segregated or integrated) influenced perceptions of faculty members and DHs concerning actual and ideal leadership behavior of DHs. The perceptions of the leadership behavior of an ideal DH were the same for faculty members as for DHs. Female faculty members in integrated depts described female DHs of such depts as exhibiting more initiation of structure than DH male counterparts. Male faculty members in segregated depts described male DHs of such depts as exhibiting more consideration than female faculty members in such depts attributed to their female DHs. No differences were found between the descriptions of the ideal behavior of an ideal dept head by male and female faculty, irrespective of whether the faculty members were in segregated or integrated depts.

493. QUINN, Rebecca. The effect of group structure on the acquisition of knowledge and skills in selected physical education courses. Ph.D. in Physical Education, 1976, 110 p. (J. L. Scahill)

The knowledge and skills of women PE majors instructed in PE activity classes composed solely of majors in PE and general activity courses open to all female students enrolled in San Diego State University were compared. Basketball and track and field classes were selected, and Ss included a total of 68 women PE majors. A 2-way ANOVA was applied to the data, and the following results were obtained: the combined effect of the 3 basketball tests (written and skills) resulted in a significant difference in favor of the Combined PE (CPE) group, and there was no significant difference between the CPE group and the PE majors group on the track and field tests (written and skills) but data indiated a significant interaction factor, and a majority of the Ss in all groups expressed a preference for classes composed solely of PE majors.

494. SAPPINGTON, Vera E. The role of the women's basketball official as perceived by selected groups of subjects. Ph.D. in Physical Education, 1976, 143 p. (K. E. Miller)

The role of the official of women's intercollegiate basketball was investigated by survey technique. Participant groups were coaches, officials, players, and spectators involved in IAIAW women's intercollegiate basketball in IA during the 1975-76 season. Questionnaire items were logically clustered by a panel of 5 judges, after which the survey data were submitted to a 2-way ANOVA ($p=.05$). The following conclusions were drawn: Significant differences among opinions expressed by the 4 S groups were found; there were significant differences among the clusters of items and a significant interaction was noted; consensus of 80% or more of all individuals in each of the 4 respondent groups was obtained for 40 of the 53 items; several other items were identified as providing a potential source of role conflict for the official.

495. SOPER, George E. Influence of head position on human myotatic reflex. Ph.D. in Physical Education, 1976, 124 p. (G. M. Asprey, G. L. Soderberg)

16 normal and 6 cerebral-palsied male volunteers were positioned supine on a circuloelectric bed and tested in 4 positions (upright, head midline (UHM); upright, head ventroflexed (UHV); upright, head turned (UHT); inverted, head midline (IHM); to determine if differences in head and body positions influenced the patellar tendon reflex. They were then tested in 3 positions (UHM, IHM, and UHM) to determine if the order of the test positions influenced the excitability of the patellar tendon reflex. A solenoid reflex hammer was used to strike the

patellar tendon 20 times for each of the 7 positions. IEMG responses of the quadriceps and striking force of the hammer were simultaneously recorded. Peak-to-peak EMG responses from the hamstrings and quadriceps were recorded for some trials. Results indicated that: ventroflexing or turning the head in the upright body position does not increase the excitability of the patellar tendon reflex; in normal Ss the inverted body position does not increase the excitability of the patellar tendon reflex; the magnitude of the patellar tendon reflex is greater in Ss with spastic cerebral palsy than in normal Ss; use of the inverted body position to facilitate extensor muscles in spastic lower limbs of cerebral-palsied patients may be contraindicated as a therapeutic procedure.

496. TWEITMEYER, T. Alan. A biomechanical and ultrastructural comparison of vascular smooth muscle from DOCA hypertensive and normotensive rats. Ph.D. in Physical Education, 1976, 194 p. (J. A. Maynard, R. C. Bhalla)
Calcium metabolism and acid and alkaline phosphatase activities in vascular smooth muscle from normotensive (N=102) and DOCA hypertensive (N=88) rats were compared. The rats differed only in BP at sacrifice: Normotensive = 140 ± 1.1 mmHg; DOCA = 204 ± 2.0 mmHg. Data were compared utilizing Student's t test for independent samples and statistical significance was set at the .05 level. Calcium uptake by mitochondria and microsomes isolated from DOCA rat aortae was reduced in comparison to the same fractions from normotensive animals. Calcium accumulation by aortic strips from DOCA rats was increased in comparison to normotensive strips at all incubation times studied, with a significant increase at 20 min. The total calcium content of aortae and tail arteries from DOCA rats was increased in comparison to normotensive samples; the aortic increases being statistically significant. The activities of acid and alkaline phosphatase were increased in all fractions isolated from DOCA rat aortae in comparison to corresponding fractions from normotensive aortae. It was concluded that DOCA hypertensive rats have an altered calcium metabolism and increased acid and alkaline phosphatase activities in comparison to normotensive rats. Such alterations may effect the contractile and morphogenetic functions of vascular smooth muscle in the hypertensive condition.

497. ZAMBRASKI, Edward J. The role of renin-angiotensin and prostaglandin hormonal systems in the regulation of renal blood flow during exercise in dogs. Ph.D. in Physical Education, 1976, 110 p. (C. M. Tipton, G. F. DiBona)
Adult mongrel dogs were studied at rest, during untreated exercise tests (light, moderate, and heavy exercise), and during exercise tests while receiving angiotensin II antagonist (AIIA)

(0.4 µg/kg/min IV). Animals were also studied during heavy exercise subsequent to the infusion of indomethacin (2 mg/kg IV) to inhibit prostaglandin synthesis. In 4 animals, intrarenal blood flow distribution was examined at rest and during heavy exercise by the microsphere method. Continuous measurement of $\bar{X}$ arterial pressure, left renal blood flow, and left renal vascular resistance were made at rest prior to each exercise bout, and during the run. Arterial plasma renin activity and left kidney renin secretion rate were determined at rest and during exercise in some of the untreated and AIIA treated animals. Renin was measured by radioimmunoassay for angiotensin I. Results indicated that: circulating AII is not involved in mediating autoregulation of renal blood flow during exercise; the prostaglandin hormonal system is not responsible for autoregulation of renal blood flow during exercise; light, moderate, and heavy exercise increase arterial plasma renin activity and left kidney renin secretion rates; heavy exercise does not cause a redistribution of intrarenal blood flow.

UNIVERSITY OF KANSAS
LAWRENCE, KANSAS

(Jean L. Pyfer)

498. BROWN, Diane D. *An investigative study showing relationships between existing preschool children's tactile, motor accuracy and perceptual-motor skill scores and other selected factors*. M.S. in Physical Education, 1976, 122 p. (J. Pyfer)

499. CHAPMAN, Michael J. *Conscious control of heart rate during the exercise recovery period of college age men*. M.S. in Physical Education, 1976, 103 p. (J. Pyfer)

500. CHUNG, Myongja. *A comparison of certain ECG interval times between mentally retarded and normal children at rest and during exercise, and during recovery*. M.S. in Physical Education, 1976, 138 p. (Wayne Osness)

501. COLLINS, Karen M. *The effect of anxiety in elementary school children on performance of a balance task*. M.S. in Physical Education, 1976, 204 p. (J. Pyfer)

502. CROOKS, Mark. *Relationships of physical, social, and physiological variables to psychological performance in subjects*. Ph.D. in Physical Education, 1976, 404 p. (J. Pyfer)

A multivariate investigation was conducted to determine the extent to which psychological functioning in an aged sample was influenced by a variety of selected physical, social, and physiological variables. 70 Ss (ages 55-89) residing in a retirement community were studied. Psychological test measures included subtests from the WAIS and the Bender-Gestalt Test. The measures were found to be sensitive indicators of mental dysfunction and/or impending death in both aged and cardiac Ss. Physical, social, and physiological variables studied were: age, ht, wt, sex, marital status, time resided, education level, extent of daily reading, cigarettes smoked, resting HR, systolic and diastolic BPs, cardiac status, and physical activity levels as determined from a standardized physical activity interview. Reliability estimates were obtained on physical (aerobic) activity ratings, BP and HR measurements, and Bender-Gestalt scores and were judged adequate. 5 regression equations were obtained for predicting performance on the psychological test measures. In general, they indicated that physical (aerobic) activity level was a significant predictor of mental functioning ($p < .001$) on all but the Digits Forward subtest. In contrast, age was significantly related to mental functioning only on 2 of the measures, the Block Design subtest and the Bender-Gestalt Test ($p < .01$). This activity related finding was further supported by the finding that the lower the systolic BP, the better the performance on Digits Forward and Bender-Gestalt Tests. In addition, the lower the resting HR, the better the performance on the Similarities subtest. Also, an educational influence was found; higher education levels were associated with higher performance on the Digits Backward and the Bender-Gestalt measures ($p < .01$). These results strongly suggest that the integrity of mental functioning is related more to level of physical (aerobic) activity than to advancing age.

503. FAHRING, Alan. Effect of in-season weight training on strength as related to football. M.S. in Physical Education, 1976, 56 p. (W. Osness)

504. GRAY, Jerrye L. Leisure characteristics associated with a selected sample of older Lawrence, Kansas residents. M.S. in Physical Education, 1976, 132 p. (J. Pyfer)

505. HINTON, Judith P. Characteristic health patterns and health services of two elementary schools in Shawnee Mission District 512. M.S. in Physical Education, 1976, 82 p. (P. Huntsinger)

506. JONES, Deborah W. A study of movement exploration and relaxation measured by a B-A-T-D feedback unit and the Torrance tests of creative thinking. M.S. in Physical Education, 1976, 231 p. (J. Pyfer)

507. MATTIACE, Michael R. Individual instruction in the physical skills of basketball, volleyball and tennis compared to a traditional program in physical education. M.S. in Physical Education, 1976, 116 p. (W. Osness)

508. NELSON, Mary A. The effect of muscle testing, neurovascular holding, neuro-lymphatic massage and meridian tracing on muscular strength. M.S. in Physical Education, 1976, 76 p. (W. Osness)

509. NICK, David H. A comparison of ratings and qualifications of basketball officials in the Catholic youth organization athletic program of Johnson and Wyandotte counties in Kansas. M.S. in Physical Education, 1976, 84 p. (W. Mikols)

510. OPDYCKE, Douglas. A survey of opinions on the certification of male coaches in Kansas. M.S. in Physical Education, 1976, 55 p. (W. Osness)

511. OSNESS, Donna L. The development of a criterion-referenced comprehensive health knowledge inventory for elementary grade levels 4, 5, and 6. M.S. in Physical Education, 1976, 94 p. (P. Huntsinger)

512. PYLE, Sara R. An analysis of the reported accidents at Overland Park School. M.S. in Physical Education, 1976, 91 p. (P. Huntsinger)

513. ROSEL, Steven D. A survey of the intramural activity programs at the universities within the Big Eight Athletic Conference. M.S. in Physical Education, 1976, 124 p. (W. Osness)

514. SALB, Karl L. A cinematographical analysis of the Salb variation of rotational style shot putting. M.S. in Physical Education, 1976, 108 p. (W. Osness)

515. SCHMIDT, Jacqueline A. Relationships of selected variables to leg strength and leg power during the lunge and recovery sequence in foil fencing. M.S. in Physical Education, 1976, 107 p. (C. Zebas)

516. SIMMONS, John E. Peer evaluation of perceptual-motor handicapped children. M.S. in Physical Education, 1976, 62 p. (J. Pyfer)

517. STROHMEYER, Daniel D. The effects of an exercise training program on grip strength and hitting distance and the relationship of grip strength and arm length to hitting distance in golf with a five iron. M.S. in Physical Education, 1976, 65 p. (W. Mikols)

518. STULL, Ronald D. A comparison of the directional cleat and the fixed sole cleat when testing traction on varying ground surface conditions. M.S. in Physical Education, 1976, 60 p. (W. Osness)

519. TETREAULT, Denise M. *Performance characteristics of the sprint run in competitive and non-competitive JHS girls*. M.S. in Physical Education, 1976, 100 p. (C. Zebas)

UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY (G. A. Stull)

520. FELTS, W. Michael. *Effects of mental practice in combination with two types of instructional input on learning and retention of a novel motor skill*. M.S. in Physical Education, 1976, 66 p. (J. Kearney)

Ss practiced a novel ball toss 3 times/wk for 4 wks, experienced a 5 wk period of no practice, and then retrained until obtaining a score equivalent or greater than that attained during the 12th practice session. Training sessions were approximately 8-½ min with the 3 mental practice groups receiving 24 actual tosses and the physical practice group 36 tosses/session. Instructional input for the audio input group was provided by a taped replay of a verbal analysis of the skill. A video replay of expert skill performance was presented as visual input for that group. ANOVA revealed improvement ($p < .05$) by all groups over the learning period with no significant among group differences. No significant performance decrement was demonstrated for any group following the 5 wk rest period.

521. PHILLIPS, Rebecca L. *The status of professional training programs offering preparation in correctional recreation*. M.S. in Recreation, 1976, 90 p. (D. Vinton)

In June, 1975 a questionnaire was sent to each of the 330 colleges and universities offering professional programs in rec, parks, and related areas. Of 221 respondents, only 25 offered programs in correctional rec and only a few were judged to have substantial programs. There was an interdisciplinary approach to the professional training programs in correctional rec, with the rec depts offering a majority of the courses for preparation in the field.

522. STREIN, John W. *Cardiorespiratory effects of training three days per week at a specified intensity on sedentary college women*. M.S. in Physical Education, 1975, 56 p. (J. Kearney)

14 sedentary college women trained on a treadmill 3 times/wk for 9 wks at an intensity of 50% of HR reserve added to resting HR until 1,000 beats were elicited above the resting value. The specific variables examined included HR response to a standardized task of 300 kpm min^{-1} on a bicycle ergometer, max VO_2, lung ventilation, ventilation equivalent, O_2 pulse, and HR at max VO_2. The only significant training effects from pre- to posttest were for max VO_2 and O_2 pulse.

523. YOUNG, Claudia T. The relationship between degree of participation in leisure activities and self concept of older adults. M.S. in Recreation, 1976, 62 p. (D. Vinton)
Ss, 10 men and 50 women (ages 58-99) completed McKechnie's Leisure Activities Blank and the Tennessee Self-Concept Scale. Pearson product-moment correlations failed to show any significant relationship between degree of participation in leisure activities and self-concept of older adults.

UNIVERSITY OF MARYLAND
COLLEGE PARK, MARYLAND (David H. Clarke)

524. BEDFORD, Stephen L. The development of a student nonverbal behavior categorization instrument. M.A. in Physical Education, 1976. (G. Kramer)
3rd and 4th grade students from 2 ele schools participating in PE were videotaped. All observable nonverbal behaviors were described and recorded in a diary. After 5 hrs of taping, the behaviors were condensed, and 10 categories and subcategories were developed. With further refinement of the categories, descriptions, and corresponding tally sheet, the student nonverbal behavior instrument was revised. 22 ele school PE teachers were instructed in the meaning and use of the categories, descriptions, and tally sheet. 1 boy and 1 girl were used as Ss. While viewing a videotape recording of 1st the girl and then the boy, the observers recorded as many nonverbal behaviors as possible. After a rest period, the observers viewed the same recording and followed the behavior identification procedure a 2nd time. No significant difference in behaviors was observed between the boy and the girl, and no significant differences were found in the observations of the repeated measure. These data supported the conclusion that the instrument is valid, reliable, and viable.

525. BERRYMAN, Jack W. John Stuart Skinner and early American sport journalism, 1819-1835. Ph.D. in Physical Education, 1976, 321 p. (M. H. Eyler)
John Stuart Skinner was born in Calvert County, MD, Feb 22, 1788. As founder and editor of the American Farmer in 1819, he introduced a sustained weekly agricultural magazine to Americans for the first time. Shortly after its beginning, Skinner began to include information on exercise, recreation, amusements, and sporting pursuits. He continued to print more and more material relating to sport until Jan, 1825, when he initiated a permanent section of the American Farmer entitled the "Sporting Olio." He carried his interest in sport one step further in Sept, 1829, when he issued the 1st no. of the American Turf Register and Sporting Magazine, America's first specialized sport magazine. As a specialist in sporting matters, the Turf Register served

as a forum to unite, stimulate, and solidify the rapidly growing American interest in sports of all kinds. Other aspiring sportsmen, editors, and publishers already in the magazine business rapidly realized that Skinner had established a precedent for the possibility of sport journalism as a profitable enterprise. Accordingly, 6 new sport magazines began between 1826 and 1835, most of which had some direct interrelationship with Skinner and his 2 magazines. Indeed, on the basis of his accomplishments and contributions, John Stuart Skinner deserves the title of Father of American Sport Journalism.

526. CALLAHAN, Lawrence S. The status of physical education in Catholic elementary schools in the United States. M.A. in Physical Education, 1976, 136 p. (K. R. Church)
The nature of existing conditions of PE in Catholic ele schools in the US was investigated. Data were collected by questionnaire from 108 superintendents of Catholic schools, designed to obtain information on the organization, management, program, evaluation, financing, and future planning of PE in Catholic ele schools. The 108 respondents represented 72% of the superintendents receiving questionnaires and 2,112,743 students in 6,572 Catholic schools. The time alloted for PE was below recommended AAHPER standards. The majority of those teaching PE was composed of regular classroom teachers, and students received PE an average of twice a wk. There was very little professional supervision and in-service training for PE. Games and practice in sport skills were the most provided activity experiences in the program. Periodic evaluation of the PE program was provided by a small %. Less than ½ met state PE standards. Financing of the PE program was usually through the regular school budget. Development of a PE curriculum was the most common plan for the future, but there were no plans to hire additional central office staff for PE.

527. CRAWLEY, Allison M. Effects of continuous vs. interval training at constant mechanical work on cardiorespiratory fitness in college women. M.A. in Physical Education, 1976. (D. H. Clarke)
18 untrained college women were divided into 4 groups which followed training programs composed of combinations of 2 modes of training, continuous and interval, and 2 levels of total work, high and low. Ss trained on a bicycle ergometer 3 times/wk for 6-2/3 wks. Continuous groups trained at loads which elicited HRs roughly equal to 75% of max HR. Interval groups trained at loads which alternated every 2 min between 150 kpm/min below and 150 kpm/min above that load which elicited a HR roughly equal to 75% of max HR. Pre- and posttraining fitness parameters were predicted max VO_2 and HR at a fixed submax load. Continuous training was significantly more effective than interval training

for increasing max VO_2. Both modes of training were equally effective in decreasing HR at a fixed submaximal load. There was no difference in training effect between the high and low total work groups in either of the fitness parameters. These results do not support the hypothesis that total work is the primary training stimulus.

528. HEDRICK, Stanley H. Leadership behavior and organizational climate as related to department chairpersons. Ph.D. in Physical Education, 1976, 122 p. (G. F. Kramer)

525 returns from 16 institutions located within the boundaries of the states that comprise the Atlantic Coast Conference were analyzed. The Leadership Behavior Description Questionnaire (LBDQ), Form XII, was used to assess leadership behavior, and the College and University Environmental Scales (CUES), 2nd ed., provided data on organizational climate. Referent groups were not congruent on the LBDQ dimensions of Persuasiveness, Initiation of Structure, Consideration, Predictive Accuracy, Integration, and Superior Orientation. The results pertaining to organizational climate indicated that referent groups did not agree on perceptions of Community, Awareness, Propriety, Campus Morale, and Quality of Teaching and Faculty-Student Relationships. LBDQ dimensions were found to be related to CUES, Scales and Subscales. However, those LBDQ dimensions accounting for predictability had little influence upon the CUES, scales and subscales. Administrators tend to agree among themselves as to role-expectations and need dispositions, and subordinates tend to disagree among themselves. If indeed the instruments are valid, and PE depts effectively seek to fulfill stated needs and interest dept chairpersons should examine their communicative methodology so as to better exemplify the theoretical model presented. Students in the present educational setting cannot accurately assess leadership behavior; until students are placed in a situation where they can be knowledgeable through a direct experience with the authoritative head, the LBDQ should not be used. The person demonstrating those characteristics applicable to person-orientation will be able to provide a more effective and efficient climate than the system oriented person.

529. IVY, John L., Jr. The role of insulin during a glycogen loading process and its effect on adenosine 3', 5' - monophosphate levels of striated muscle. Ph.D. in Physical Education, 1976, 157 p. (D. H. Clarke)

96 male albino rats were assigned randomly to 1 of 4 exp groups: fatigued, diabetic; fatigued, non-diabetic; non-fatigued, diabetic; and non-fatigued, non diabetic. Ss were randomly assigned to 1 of 4 levels within their respective groups which identified surgical time as follows: immediately following

exhaustive exercise or control treatment; 2 hrs after glucose administration; 16 hrs after glucose administration; or 24 hrs after glucose administration. Analysis of muscle glycogen revealed that before glycogen synthesis can occur, the initial muscle glycogen concentration must be reduced in order for glucose transport to be stimulated. It was also indicated that insulin is not necessary for muscle glycogen synthesis, but is necessary for super-compensation of glycogen. Analysis of cyclic AMP revealed that muscle glycogen catabolism during an exhaustive exercise does not occur as a result of an increase in the cycle AMP concentration. The action of insulin to promote glycogen synthesis is not the result of a decreased concentration of cyclic AMP. Furthermore, insulin deficiency did not cause a rise in the cyclic AMP concentration. Therefore, it was concluded that insulin is not responsible for the homeostatic regulation of muscle cyclic AMP.

530. LOWE, Robert C. Various frequencies of training as determiners of physiological aging in rats. M.A. in Physical Education, 1976, 134 p. (D. H. Clarke)

69 young, male albino rats were randomly assigned to a control and 3 exercise treatment groups. The control group remained sedentary for 10 wks, and each of the exercise treatment groups participated in swimming, 1, 5, or 10 times/wk. Both duration and intensity of training increased progressively. Following the training period, all animals were weighed, anesthetized, and their tails excised. Physiological aging was determined by isometric tensions exerted when tail tendon collagen was thermally treated. Therefore, 6 tail tendon fibers were removed from each animal and their diameters measured. The temperature of the thermal chamber was increased from 50°C to 62°C, and the resultant isometric tensions were recorded. The tension in g/mm^2 was then calculated for each tendon fiber. Groups training 5 and 10 times/wk had smaller body wts than the group training time/wk or the control group. The $\bar{X}$ max isometric tensions were not found to differ significantly between the control group and any of the 3 exercise groups.

531. MAHURIN, Alonzo J. Blood serum component concentration changes as a result of high fit athletes racing over different long distances. Ph.D. in Physical Education, 1976, 111 p. (D. H. Clarke)

Venous blood samples were drawn from rested long distance runners and high place finishers in 5 races ranging in distance from 10 km to the marathon. Each sample was analyzed to determine the serum concentrations of aldolase, LDH, CPK, GOT, GPT, haptoglobin, α_1 acid glycoprotein, and glucose. The resting athletes displayed normal $\bar{X}$ levels of glucose and aldolase, slightly elevated concentrations of LDH and GPT, sharply increased CPK and GOT levels and markedly low haptoglobin and α_1 acid glycoprotein. Distinct concentration patterns were noted for post race aldolase, LDH, CPK, glucose, haptogolobin and α_1 acid glycoprotein, as concentration $\bar{X}$s were plotted against distance raced. Post race aldolase concentrations best correlated (*r*=.832) with the distance raced, suggesting that aldolase was the best indicator of tissue damage. LDH and CPK concentrations displayed the same general pattern as aldolase, but exhibited larger inter *S* variability. $\bar{X}$ blood glucose concentrations markedly increased during the shorter races, while falling to resting levels in the 2 longer races. Individual cases of hypoglycemia were rare. α_1 acid glycoprotein and haptoglobin concentrations gradually decreased as the race distances increased. Post race GPT and GOT did not display distance related patterns. It was concluded that tissue damage does occur in highly trained distance runners during competitive long distance races, and that hypoglycemia is not the cause of exhaustion during long distance racing.

532. MANCE, Richard M. *An examination of a 23-day theory of biological timing as it pertains to motor performance and motor proficiency*. Ph.D. in Physical Education, 1976, 186 p. (G. F. Kramer)

The Cyclgraf Charting-Kit published by Biorhythm Computers Inc. was used to plot the specific high, "critical," and low days of each *S*'s 23-day physical cycle. Each *S* (*N*=39) was randomly placed into 1 of 6 possible testing sequences and was tested on each of the 3 days of the rhythm. *S*s were tested on the Purdue Pegboard test and the 12-min Walk/Run Test. Measurements of motor proficiency were obtained from the statistical records of the 1974-75 Washington Bullets professional basketball team. The motor proficiencies of the 6 players with the most min played in the season were selected for evaluation, and each player's 23-day physical cycle was plotted for the entire season of 99 games. The motor proficiences evaluated were field goals and foul shots. The game statistics from the high, low, and "critical" days of the entire season were compared to determine if any significant differences in athletic proficiencies occurred on these days. No evidence was found to support the Fliess 23-day physical cycle for gross motor performance and motor proficiency. However, evidence was found within the fine motor skills category to generally support the 23-day theory.

533. MURRAY, Joseph F. *The activity-set hypothesis for warm-up decrement in a movement balance task*. Ph.D. in Physical Education, 1976. (G. F. Kramer)

75 male volunteers were divided into 1 of 3 groups and given 20 20-sec pre-practice training bouts on a stabilometer immediately prior to testing, followed by a period of rest. Immediately

following rest, Ss in each group were given 10 20-sec tests on the stabilometer, and then either rested, rested and then performed an interpolated task for the activity-set hypothesis, or rested and performed an interpolated task for the activation hypothesis. Ss were then retested on the stabilometer for an additional 6 trials. It was concluded that the activity-set hypothesis was effective in reducing warm-up decrement (WUD) and that activation was not a factor. In addition, the prediction was supported that the activity-set hypothesis that practicing a task of the same class as the criterion task immediately prior to the resumption of the criterion task should reinstate the proper activity set, causing a reduction in WUD.

534. PRIBULA, James G. An evaluation of undergraduate professional programs in physical education for selected colleges and universities in Pennsylvania. Ph.D. in Physical Education, 1976. (G. F. Kramer)

13 institutions offering an undergraduate professional preparation program in PE were given the 4th ed. of a 10-area score card designed by Bookwalter and Dollgener. A variation of professional preparation programs in PE occurred among the institutions. When compared to national norms, the state colleges and large, state-supported institutions of university status came closest to meeting the recommended standards of the selected score card. The lower scoring programs were in small, privately supported colleges with liberal arts status. Overall, the professional undergraduate programs ranked above the national sample $\bar{X}$ with the lowest institution's total score at the 64th %ile In fact, all 13 institutions had area scores that were above the 88th %ile nationally. However, several institutions also had area raw scores that were below the 50th %ile nationally. Library and Audio-Visual Aids ranked first among the areas in % of attainment, while Staff Standards ranked last among the areas in % of attainment. Other findings revealed that General Institutional and Departmental Practices had the smallest variation between the highest raw score and the lowest raw score among the institutions, while Indoor Facilities had the greatest variation between the highest raw score and the lowest raw score. The PA institutions as a group ranked above the 76th %ile in all 10 score card areas when compared to the national norms. An item analysis was conducted to ascertain those item scores within each of the 10 areas that were below 50% of attainment.

535. SCHOEDLER, James. A comparison of the use of active game learning with a conventional teaching approach in the development of concepts in geometry and measurement at the second grade level. Ph.D. in Physical Education, 1975, 91 p. (J. H. Humphrey)

A comparison of 2 methods of teaching concepts from a selected chapter of a widely accepted, commercially prepared modern mathematics program was performed. All 2nd grade children at an ele school were taught 15 lessons and given 3 criterion measures, a pre, post, and interval test. 2 control groups were not taught these concepts, 2 other groups were taught by 2 different teachers directly from the lessons specified in the selected chapter of academic concepts, and 2 other groups of children were taught the selected academic concepts through the active game learning medium. Parallel forms of Test A and B developed by the Houghton Mifflin Co. were used as the criterion measures. Form A was repeated as the interval test administered 6 wks following the instructional period. Those taught by means of the active game medium were found not to have scored significantly higher than the 2 groups taught by means of the commercially developed academic approach. However, the $\bar{X}$ scores for both active game groups were comparable to the 2 academic groups. Furthermore, the gains of the active game groups were both greater than the gains for the academic groups. Since there was no significant difference between the academic and active game groups, it could be concluded that 1 method of instruction is as effective as the other. Taking into consideration the favorable and overwhelming enthusiasm, even though subjective, on the part of both teachers and students, the active game medium should be considered as a positive source of instruction.

536. STIMMEL, Barry E. The effect of low intensity and high intensity exercise on the serum enzyme creatine phosphokinase. M.A. in Physical Education, 1976, 41 p. (D. H. Clarke)

48 Ss (ages 17-25) not actively exercising were randomly assigned to 1 of 2 exercise groups. The low intensity group exercised at 40% of their estimated max HR and the high intensity Ss exercised at 90% of their estimated max HR for 15 min on a motorized treadmill. Blood samples were collected at rest, 5 min, 4, 8, 12, 24, 36, and 48 hrs after exercise. The blood serum CPK was measured, and Ss completed a residual muscle soreness rating scale. Both intensities of activity resulted in a significant increase in CPK levels, but there was no significant difference between the groups. None of the Ss reported any residual muscle soreness, so it was concluded that elevated CPK is not necessarily accompanied by residual muscle pain.

537. SVEC, Jerome J. The relationship between level of aspiration and motor performance in third and sixth grade boys. M.A. in Physical Education, 1976, 75 p. (B. F. Husman)

Using 3 motor skills, the softball throw for distance, the standing broad jump, and the wall volley, 50 boys (25 3rd graders and 25 6th graders) were asked to predict future performances for each motor skill. The discrepancy score, which was used to examine the difference between the performance score and the next aspiration score, was computed. Each grade was divided into 3 different ability groups: high, middle, and low. A student's overall rank, obtained from the average rank for each event, determined his placement in an ability group. ANOVA indicated no significant differences. It was concluded that age, skill level, and any combination of age and skill level had no effect on discrepancy scores.

538. THOMAS, Richard C. The effect on an eye-foot coordination program on first and second grade children on improving their perceptual-motor development. M.A. in Physical Education, 1976, 95 p. (J. H. Humphrey)

Ss were 67 children from 3 1st and 2nd grade classes. Each class was randomly divided into an exp and control group. The exp program included 12 lessons of eye-foot coordination activities, taught in 20 min sessions, 3 days/wk for 4 wks. The control group received no PE instruction during the exp period. The Minnetonka Motor Ability Test was administered as the pre- and posttest, to measure the level of perceptual-motor development. Both groups improved from the pretest to posttest on 4 of the 5 subtests. A significant F-ratio was found on the interaction between the test occasion and groups. Differences occurred between pretest and posttest scores on 2 of the 5 subtests for the exp group. The eye-foot coordination activities program had some improvement on the perceptual-motor development of 1st and 2nd grade children.

539. WESTERVELT, Marylyn V. A study to determine the contribution of creative motor activities to motor development and readiness levels in pre-kindergarten children. M.A. in Physical Education, 1975, 85 p. (J. H. Humphrey)

Ss, 15 boys and 9 girls, 4 yrs old, enrolled in a pre-kindergarten class, were divided into 2 groups and pretested with the Peabody Picture Vocabulary Test to provide an estimate of verbal intelligence. Motor development was measured by balance, agility, speed, power, flexibility and accuracy. Group A was given instructions in creative motor activities by the investigator for 20 min/day, 3 days/wk for 4 mo. Group B had instruction in creative motor activities for20 min/wk for 4 mo. Results indicated that a creative motor activities program can be valuable in enhancing the motor development of 4 yr old children. 1 20 min period a wk was as beneficial as 3 20 min periods a wk. Verbal intelligence improved considerably over the exp period, with Group B making significantly greater gains than Group A.

UNIVERSITY OF MISSOURI
COLUMBIA, MISSOURI

(J. Roberts)

540. THOMAS, Tom R. Fatty acid profile and cholesterol composition in skeletal muscle of physically trained and untrained men. Ph.D., 182 p. (B. R. Londeree)

The FA distribution and cholesterol composition of skeletal muscles of trained and untrained men were compared. Ss were 10 sedentary men and 10 long-distance runners. A needle biopsy was performed on the vastus lateralis muscle of each S. The muscle sample was homogenized, centrifuged, and the resulting pellet analyzed by gas-liquid chromotography for individual FAs and cholesterol. MANOVA revealed that trained and untrained groups were similar in the % of individual FAs, except the % of palmitic acid was significantly lower ($p < .02$) in the trained muscles. The distance runners also tended to have more linolenic and eicosatrienoic acids and longer chain length in the muscle homogenates. Cholesterol composition was not significantly different between the groups but tended to be lower in the runners. These results indicated that some increase in membrane fluidity may be present in trained skeletal muscle. This adaptation could result in greater activity of membrane-associated enzymes, enhanced active transport across the membrane, and altered cellular response to hormones. Longer chain length may produce an inner membrane cohesiveness which could explain the protective effect of training against cellular enzyme leakage and mitochondrial swelling during strenuous exercise. No r was found between CA and the FA or cholesterol composition.

UNIVERSITY OF MONTANA
MISSOULA, MONTANA

(G. Nygaard)

541. JOHNSON, Howard E. Attitudinal variants of backpackers who participate in organized trips, backpackers who exclude organized trips, and non-users. M.S. in Recreation, 1976, 83 p. (J. Meier)

Differences in wilderness attitudes among backpackers who participated in the U of Montana's Campus Rec Dept's wilderness trips, backpackers who did not participate, and non-users from the U of Montana were identified. Demographic variables as well as previous wilderness backpacking experience of the 3 groups were determined. Ss were classified as Participants, Non-participants, and Non-users as defined in the previously stated 3 groups. The Outdoor Rec Questionnaire was mailed to Ss in each of the 3 groups to determine select demographic information and S's orientation to backpacking as well as their attitudes toward wilderness. Statistical analysis was used to determine characteristics of each group and differences in attitudes between groups. Several conclusions were drawn: Wilderness experience has a positive influence on attitudes toward wilderness values; Results of the Hendee Wilderness-Urbanism Attitude Test (HWUAT) illustrated that participants were significantly different than non-participants in attitudes toward wilderness; and results of the HWUAT illustrated that participants were significantly more wilderness oriented than non-users in attitudes toward wilderness.

542. KEARBY, Steven F. The bad attitude: Players who do not try. M.S., Health, Physical Education and Recreation, 1976, 73 p. (J. Dayries)

In the athletic community, the term "bad attitude" is frequently used to characterize some members of teams. The ways in which the "bad attitude" is used by 9 baseball coaches to explain the relationships between themselves and their players were explored. This study will seek to sort out, from the recounted experiences of these coaches, the different uses of the term "bad attitude"; the circumstances associated with bad attitudes; and the methods coaches used to manage bad attitudes. A major purpose was the generation of theories about the nature of sport due to the need for conversion of hardcore research data to theory (i.e., grounded theory). This qualitative methodology enhanced obtaining data from the informant coaches in a natural and sincere manner. Interviews with the coaches were deliberately unstructured, although the interview necessarily revolved around certain questions. Data indicated that the bad attitude is a manifestation of deliberate withholding of performance ability—not trying. It follows that coaches seem to classify their players who have bad attitudes as the: alibier, benchwarmer, uncoachable player, selfish player, immature player, loafer, and faker. Coaches typically use the glossy language of sport in an effort to describe the bad attitude and eventually label and place a player into a cateogry. These glossy terms are called Performance Summarizers. Examples focus on: the circumstances that coaches are aware of to explain the performance of their team and the personality traits of individual players. Coaches point to 3 procedures that are useful in managing a bad attitude when exhibited by a player: communication with the player, an analysis of the player's attitude, and sanctioning the player by dismissing him from the team.

543. LAMARRE, Gerry J. A comparison of the effects of command and guided discovery styles of teaching on college students' cognitive achievement and their attitudes toward a winter camping class. M.S. in Recreation, 1976, 119 p. (G. Nygaard and J. Meier)

Effects of 2 of Muska Mosston's styles of teaching on college students' cognitive achievement and attitudes toward a rec class were tested. Ss were 64 U of Montana students. 29 students finished in the guided discovery class and 35 in the command class. Both classes studied identical subject material on winter camping for 9 wks. Prior to instruction, both classes were administered a winter camping knowledge examination and a semantic differential attitude test. During the course of instruction, 10 20-min tape recordings were randomly taken to establish teaching style purity and consistency. An expert in the field of Flanders Interaction Analysis System analyzed the recordings and concluded that the guided discovery and the command styles of teaching were used in the respective classes. After 9 wks of instruction both classes were given posttests on achievement and attitudes using the same knowledge and attitude tests used in the pretest. The Z-statistic was applied to the pre- and posttest results of the cognitive knowledge examination for both classes. No significant findings resulted between the 2 groups. Both classes did gain in subject knowledge; however, this study indicates that no 1 class learned significantly more than the other. The student t was applied to all attitude analysis data. Semantic differential attitude tests indicated significant differences between the 2 groups. Significant differences were found within the command class between field trip participants and non-participants. The participants had more positive attitudes toward winter camping than the nonparticipants. The guided discovery class attitudes were significantly more positive toward winter camping than the command class.

544. OAKS, Robert C. The evolution of the Campus Recreation Department at the University of Montana, an historical analysis 1950-1975. M.S. in Recreation, 1976. (J. Meier)

The historical development of the Campus Rec Dept (CRD) at the U of Montana, 1950-1975, was identified. The historical method of research was used to identify, secure, and organize data obtained from books, periodicals, dissertations and theses, interviews, newspapers, letters, memoranda, and university files. The study was divided into 3 segments: 1950-69, 1970-72, and 1973-75. Administration and organization, staff, funding, facilities, programs, and equipment were studied for each section. Special features of the CRD were reviewed and present day attitudes and perceptions were assembled and categorized through interviewing selected members of the campus community.

Findings indicated: Financial support from both students and administration at the U of Montana greatly increased and diversified rec opportunities from 1950-1975. There was continual growth in campus rec participation between 1950-1975, with the most significant rise in participation occurring following establishment of the Rec Facilities Council in 1969. Campus intramurals and rec at the U of Montana were generally considered as only peripheral programs of the PE dept until the establishment of the CRD in 1972. The CRD experienced continuous growth and development in the offering of rec services, primarily as a result of the increase in the no. of employees, additional funding from students and administration, more rec facilities, increased activities, and a large equipment inventory. As viewed by selected individuals, the CRD appeared to be a successful and worthwhile dept.

545. PETELIN, David D. An assessment of the perceptions of selected university publics toward the campus recreation department at the University of Montana. M.S. in Recreation, 1976, 163 p. (L. Heywood)

The perceptions held by selected university groups (fr, soph, jr, sr, and graduate students) toward specific policies, procedures, and benefits associated with the U of Montana Campus Rec Dept (CRD) were determined. 264 randomly selected Ss responded to the Likert-type questionnaire.The X^2 test of independence was used to test 2 null hypotheses. The 1st stated there were no significant differences in perceptions of groups regarding specific policies and procedures associated with various services and programs of the CRD. 5 sub-hypotheses were investigated regarding: the Intramural Program, Outdoor Rec, the Equipment Room, Open Rec, and Seminar and Slideshow Program. the 2nd hypothesis stated there was no significant difference among the groups regarding their perceptions of various benefits of Campus Rec Program involvement. Statistically significant differences were observed in 5 of the 46 X^2 calculations. Responses from graduate students appeared to be responsible for this divergence of opinion. Results indicated that: Ss hold generally favorable opinions toward the policies and procedures associated with the operation of various rec and leisure service programs of the CRD. There was no significant difference among the perceptions of the groups regarding the majority of policies and procedures under investigation. There was no significant difference among the groups regarding the majority of perceived benefits under investigation.

546. SWANSON, Mark B. Physical activity attitudes of senior citizens in Montana. M.S. in Recreation, 1976, 72 p. (L. Heywood)
The ability of demographic characteristics to predict sr citizens' attitudes toward physical activity was ascertained. Demographic surveys and semantic differential attitude surveys were administered at 18 sr citizen centers in MT. Data were subjected to demographic frequency counts to determine the makeup of the best population, as well as a profile analysis of the semantic differential to gauge the general positive or negative attitude tendencies. Hypotheses were tested by ANOVA both between the demographic groups and within each demographic subgroup. Conclusions were: Negative attitude scores were achieved for 15 of 20 semantic word pairs, with a $\bar{X}$ of 3.44 on on a 7 point scale with 4.0 indicating neutrality. Sex and age are significant as predictors of attitude toward physical activity, while educational levels, occupational status and yearly income are not. There was a tendency toward more positive attitudes among males, college graduates, the still-employed, and the middle income groups, while advancing age indicated a deterioration of positive attitude. Generally, the attitude of sr citizens toward physical activity was negative.

547. VAN FOSSEN, William J. The recreational patterns and attitudes of active duty military personnel at Malmstrom Air Force Base, Great Falls, Montana. M.S. in Recreation, 1976, 128 p. (L. Heywood)
The rec patterns and attitudes of active duty military personnel at Malmstrom Air Force Base were investigated. Respondents were asked, by questionnaire, to indicate their perceived benefit, perceived influence on military duty performance, amount of use, and reason for use of Rec Services programs and facilities. Amount of use and reason for use data were tabulated in descriptive form only. X^2 was used to test 2 null hypotheses. The 1st stated there was no significant difference among selected characteristics of military base personnel and their perceived benefits of the Rec Services programs. The 2nd stated there was no significant difference among selected characteristics of military base personnel and their perceived influence of the Rec Services programs on their military duty performance. Each hypothesis encompassed the comparison of 7 independent variables with the dependent variables of perceived benefits and perceived influences. 6 independent variables (time on base, residence, education, rank/grade, race, and marital status) related only to the overall program. A 7th independent variable, amount of use, related to each of the 7 specific facility programs of the Rec Services. Results indicated: Of those variables tested regarding the perceived benefit of Rec Services programs, only the

variable of race was found to be significant; the only program found to be nonsignificant regarding its amount of use and the perceived benefit was St. Mary's rec area; of those variables tested regarding the perceived influence of Rec Services programs, only the variable education was found to be significant; the only program found to be nonsignificant regarding its amount of use and the perceived influence was the bowling center. Results also showed that a majority of the respondents indicated a favorable benefit and favorable influence on military duty performance from Rec Services programs.

548. WARNICK, Rodney B. The attitudes of University of Montana students toward the contributions of the intercollegiate athletic program and the intramural recreation program to their general education. M.S. in Recreation, 1976. (L. Heywood)

The difference between the expressed attitudes of the U of Montana students toward the contributions of the intercollegiate athletic program and the intramural rec program to their general education was determined. 708 randomly selected Ss responded to the questionnaire survey. 26 bi-polar adjective scales were used through the semantic differential questionnaire to test the attitudes of university students toward the 2 sport programs at the U of Montana. 25 of the 26 bi-polar adjective scales were found to reveal a statistically significant difference between the attitudes expressed by U of Montana Ss. Finally, Ss appeared to express more favorable attitudes toward the intramural rec program than toward the intercollegiate athletic program in the contributions made to their general education.

UNIVERSITY OF NORTH CAROLINA
GREENSBORO, NORTH CAROLINA (P. Berlin)

549. ALVAREZ, Linda R. Games. M.F.A. in Dance, 1975, 28 p. (L. Andreasen)

550. BECK, Bonnie. The styles of never married women physical educators in institutions of higher education in the United States. M.S. in Physical Education, 1976, 99 p. (C. Ulrich)

551. BRANDMAN, Pollyann. Spectrum. M.F.A. in Dance, 1976, 44 p. (L. Andreasen)

552. BRAXTON, Howard M., Jr. Values, risk taking and selection of leisure time activities among delinquent and nondelinquent boys. Ed.D., 1975, 171 p. (R. McGee)

553. BROWNING, Kenyon P. A descriptive analysis of the split six defense in football. M.Ed., 1975, 58 p. (C. Ulrich)

554. BUEDE, Patricia S. *The development of Guttman scales measuring attitude toward athletic scholarships and attitude toward women in sport*. M.S. in Physical Education, 1975, 65 p. (P. Berlin)

555. BYRUM, Mary C. *An analysis of three non-objective choreographic techniques*. Ed.D., 1976, 184 p. (V. Moomaw)

556. COOPER, Carol A. *A study of the effect of differing foreperiods on performance of the forward grab swimming start.* Ed.D., 1975, 86 p. (G. Hennis)

557. DOULL, Judith D. *The history of the development of women's costumes in selected team and individual sports*. M.S. in Physical Education, 1976, 151 p. (T. Ladd)

558. EL-HINSHIRA, Ali. *The history of physical education and sport in the Libyan Arab Republic*. M.S. in Physical Education, 1976, 84 p. (T. Ladd)

559. FODERO, Joseph. *An analysis of achievement motivation and motivational tendencies among men and women collegiate gymnasts*. Ed.D., 1976, 171 p. (C. Ulrich)

560. HARDY, C. Rex. *Status of physical education, athletics, and intramurals in community colleges and technical institutes in North Carolina*. Ed.D., 1975, 157 p. (G. Hennis)

561. HART, Virginia. *Construction of an instrument for assessing cognitive learning based upon "Ready? Set...Go!" a television course for elementary physical education/level one*. Ed.D., 1976, 208 p. (R. McGee)

562. HUNT, Virginia. *Governance of women's intercollegiate athletics: An historical perspective*. Ed.D., 1976, 319 p. (C. Ulrich)

563. KAUTZ, Elizabeth M. *The construction of a volleyball skill test for the forearm pass*. M.S. in Physical Education, 1976, 64 p. (G. Hennis)

564. KHOURI, Lorraine. *Arab children's play as a reflection of social interaction patterns of their culture*. Ed.D., 1976, 141 p. (C. Ulrich)

565. KLOCK, Gail P. *The background experiences and current status of women intercollegiate basketball coaches in the state of North Carolina*. M.S. in Physical Education, 1974, 110 p. (P. Berlin)

566. KOPROWSKI, Alison B. *Terrestrial consciousness*. M.F.A., 1976, 25 p. (L Andreasen)

567. KRUCKER, Kathleen. A history of the motivations for underwater diving as depicted in selected literature. M.S. in Physical Education, 1976, 77 p. (T. Ladd)

568. LIDDLE, Shirley. Performance on a simple reaction time task as a function of individually selected feedback. M.S. in Physical Education, 1976, 61 p. (G. Hennis)

569. LOUNDERMON, Correll D. The use of music or percussion instruments in the teaching of ninth grade modern jazz dance. M.S. in Physical Education, 1976, 65 p. (P. Berlin and L. Andreasen)

570. MARGOLIS, Ellen S. Attitudes toward women among selected undergraduate students representing various fields of study. M.S. in Physical Education, 1976, 90 p. (P. Berlin)

571. MARSHALL, Mary E. The position of women in the administration of physical education units in selected four-year, public colleges and universities. Ed.D., 1975, 271 p. (C. Ulrich)

572. MOZINGO, L. Elaine. The effects of an oral contraceptive on the submaximal work performance of college women. M.S. in Physical Education, 1976, 28 p. (A. McNeill)

573. PACE, David. The history of east coast surfing. M.Ed., 1976, 146 p. (T. Ladd)

574. PIGGOT, Bert C. Success and satisfaction of members of selected adult male bowling teams registered within the Greater Greensboro Bowling Association and their task and affiliation motivation. Ed.D., 1975, 104 p. (G. Hennis)

575. REECE, Milton E. The National Collegiate Athletic Association and the courts: A summary of the litigation involving the constitutional laws of the United States and the rules of the NCAA, 1970-1974. Ed.D., 1975, 235 p. (G. Hennis)

576. ROBERTS, Betty R. The effects of two specific practice environments on the forehand and backhand ball placement ability of beginning tennis players. Ed.D., 1975, 89 p. (R. McGee)

577. ROYALL, Mary L. The development and evaluation of an innovative inquiry approach to environmental education, in the affective domain, for fourth grade students using television. M.Ed., 1976, 75 p. (M. Solleder)

578. RUNDIO, Stephen J., III. Status as a factor affecting decisions of members of a youth basketball team. Ed.D., 1974, 108 p. (C. Ulrich)

579. SAWYER, Linda R. *She*. M.F.A. in Dance, 1976, 21 p. (L. Andreasen)

580. SCHROEDER, Nancy. *Cast methyl methacrylate*. M.F.A. in Dance, 1975, 26 p. (L. Andreasen)

581. SCHWARTZ, Lydia. *Nonsense*. M.F.A. in Dance, 1975, 18 p. (L. Andreasen)

582. SETTLE, Leah W. *A comparison of attitudes toward physical education among ninth grade students in four schools in central Virginia, with emphasis on racial significance*. M.S. in Physical Education, 1975, 133 p. (R. McGee)

583. SHAY, Nancy L. The *relationships among simple reaction time, movement time and basal body temperature during the menstrual cycle*. M.S. in Physical Education, 1976, 59 p. (A. McNeill)

584. SMITH, Gladys. *A factor analysis of motivation of women collegiate athletes*. M.S. in Physical Education, 1975, 128 p. (P. Berlin)

585. SNODGRASS, Jeanne E. *Comparisons and relationships of selected measures of self-concept in primary age children*. Ed.D., 1975, 143 p. (R. McGee)

586. STAUSS, Joan M. *Source of reinforcement as a potential factor in women's sport involvement*. M.S. in Physical Education, 1975, 111 p. (P. Berlin)

587. STROM, Arlene. *Heritage*. M.F.A. in Dance, 1976, 44 p. (L. Andreasen)

588. TURNER, Velma R. *A history of recreation at Broughton Hospital: 1883-1973*. M.Ed., 1976, 197 p. (G. Hennis)

589. WASSERMAN, Nancy B. *The construction and validation of a series of color film loops to illustrate selected women's lacrosse techniques recommended for beginners*. M.S. in Physical Education, 1976, 149 p. (K. Barrett)

590. WELLFORD, Jane. *Keonos*. M.F.A. in Dance, 1975, 27 p. (L. Andreasen)

591. WIESE, Cynthia E. *The formulation of a Q-sort to assess body-image of high school girls*. M.S. in Physical Education, 1976, 96 p. (P. Berlin)

592. WILLCOX, Diane E. *A description and analysis of the behavior of two experienced teachers simulating the movement education approach to the teaching of beginning basketball to college women*. M.S. in Physical Education, 1975, 211 p. (K. Barrett)

593. WILSON, Margaret E. Alpha to omega. M.F.A. in Dance, 1976, 25 p. (L. Andreasen)

UNIVERSITY OF NORTHERN COLORADO
GREELEY, COLORADO (Mary Behling)

594. FRANCIS, Richard W. The effects of a five-hour rehydration, following thermal dehydration, on selected physiological and physical performance parameters of university wrestlers. Ed.D. in Health and Physical Education, 1975, 78 p. (D. A. Phillips)

595. MORTON, Bruce G. Student health knowledge and its relationship to district size and health instruction in randomly selected Colorado high schools. Ed.D. in Health and Physical Education, 1976, 182 p. (B. Cooke)

HE instruction in a random sample of CO SHSs was evaluated by analyzing the relationship of SHS students' HE knowledge to school district size and HE instruction. A stratified random sample of CO public secondary schools, which included 18 districts of 181 total, was selected. The Seffrin Health Cognition Test was administered to a sample of 786 students drawn from each SHS. Administrators of sample schools were requested to respond to a questionnaire concerning HE offered in their schools. HE knowledge $\bar{X}$ scores and SDs were computed for the total sample and for students by district size and HE instruction. $\bar{X}$ scores were compared with the norms by the t test. ANOVA was employed to test the significance of the $\bar{X}$ score differences between students classified by the variables district size and HE instruction. Findings indicated that HE knowledge scores were related to district size and HE instruction in a complex fashion. The importance of HE instruction in the curriculum, especially non-direct, was confirmed. HE instruction type and district size were important variables in student HE knowledge scores.

596. TEAGUE, Michael L. A combined systematic desensitization and electromyograph biofeedback technique for controlling state anxiety and improving gross motor skill performance. Ed.D. in Health and Physical Education, 1976, 117 p. (J. Shirley)

UNIVERSITY OF OKLAHOMA
NORMAN, OKLAHOMA (Trent E. Gabert)

597. BARRAS, J. Bernadette. Changes in specific physiological parameters in middle-age women after participation in an eight-week aerobically prescribed exercise program. M.S. in Physical Education, 1976, 52 p. (R. Ratliff)

Changes in 5 physiological parameters were examined in women (ages 29-65) ($N=20$) after participation in a conditioning program which consisted of 35 min of exercise, 3 days/wk for 8 wks. ANCOVA was used, and significant changes were found in exercise HR ($p < .05$) and skinfolds ($p < .10$). Nonsignificant changes ($p > .10$) were found in resting HR, wt, and resting BP. The attendance rate was 80.6%, but no significant relationship was found between attendance and improvement in exercise HR ($r=.0469$) or skinfolds ($r=.0649$). There were no significant differences ($p > .10$) in the improvement of those under 40 yrs of age and those 40 or over.

598. BERNARD, Mary M. *The effect of progressively changing practice schedules in mirror tracing skill development*. M.S., 1976, 46 p. (T. Gabert)

Development of skill in mirror tracing was assessed following the use of a constant practice schedule, a progressively increasing practice schedule, and a progressively decreasing practice schedule. 42 5th grade students served as *Ss*. *Ss* were randomly selected and assigned to 3 groups ($N=14$) for practice. *Ss*' score was based on the distance covered in 60 sec minus the no. of errors made. A pretest, 5 consecutive days of practice, and a posttest were administered to all *Ss*. Results indicated that 5th grade students can effectively develop skill in mirror tracing using any of the 3 specified practice schedules ($p < .001$). 1-way ANOVA on $\bar{X}$ gain differences showed no significant difference between the 3 practice groups ($p > .05$). Concerning day-to-day performance assessment, 1-way ANOVA with repeated measures revealed that the progressively decreasing practice group exhibited significant differences over the progressively increasing practice group on the 2nd and 3rd day of practice ($p < .05$).

599. DIMICK, Susan M. *Rate of change of velocity of blood flow and blood pressure slopes in normal and hypertensive, endurance and resistance athletes*. M.S. in HPER, 1976, 68 p. (R. Ratliff)

Peak rate in change of velocity of blood flow and BP-HR responses were monitored during dynamic and isometric exercise in 15 distance runners and 15 weightlifters. Both groups of athletes were subdivided into normals and symptomatic or predisposed to hypertension. Interpretation of the data supports the possibility that resistance training may induce states of hypertension, and that endurance training may prevent or prolong the onset of the disease state. Measurements of blood velocity and pressure responses indicate elevated peripheral vascular resistance in many resistance trained athletes as well as a decreased mechanical efficiency of the myocardium in response to stress. Athletes with pre-disposition to hypertension had different responses to stress, even though resting values may not have indicated this. These results further imply that athletes pre-disposed to disease state are in fact different than normals, but the chronic adaptations are dependent on the type of training pursued.

600. VOTTO, Michael J. Somatotype and physical performance characteristics of major college football players. M.S., 1976, 56 p. (R. Ratliff)

23 players representing the offensive and defensive regulars of the 1975 NCAA National Championship Football team were evaluated on physiological, motor fitness and somatotype (Heath-Carter Anthropometric) measures during spring training. X values observed on the football team were age, 22.1 yrs; ht, 75.7 in., wt, 238.4 lbs; anaerobic power (Margaria Test), 2101 ft lbs/sec; C-V endurance (Bruce Treadmill Test), 14.17 min; hand grip-dominant/non-dominant, 57/54 kg; RT, 319 msec; MT, 174 msec; % fat (skinfold), 12.7%; and somatotype 4.2-5.4-1.9. The relative somatotype interposition comparison showed the football players markedly classified as endo-mesomorphic, with observable interposition differences. 1-way ANOVA for repeated measures showed significantly greater anaerobic power in offensive linemen than defensive and offensive backs, while treadmill time was significantly longer in the defensive backs than linebackers and offensive linemen. Selected flexibility measures showed the offensive linemen to be most flexible.

UNIVERSITY OF OREGON
EUGENE, OREGON (E. Reuter)

601. ASHTON, John J. Contralateral transfer of training: The effects of myotatic strength exercise technique on post-surgical rehabilitation. M.S. in Physical Education, 1975, 48 p. (L. Osternig)

602. BENNETT, Lorraine A. Reification of the human body in ancient Greece: A metabletic investigation. Ph.D. in Physical Education, 1976, 141 p. (J. Broekhoff)

The effect of the reification (objectification) of the human body on the quality of human movement was studied from an historical perspective, suggesting implications for the theory and practice of PE. The movement forms of Ancient Greece were studied within the context of J. H. van den Berg's metabletic theory and method, and the relationship of reification to the emergence of intermediary movements was examined. Intermediary movements (exercises specifically designed to improve the structure and function of the body, or to subjugate the body to the mind) were widely used in athletics during Hellenistic times but appeared unknown before the 5th century B.C. 2 periods between the 6th and 4th centuries B.C. were studied, and evidence gathered from philosophy, science, medicine, education and art corroborated this ontological shift. During this period, man started to take distance from his environment and objectify his experiences and his body. This phenomenon is clearly evident too, in modern western civilization where a reified view of the human body has become the dominant perspective. Modern PE should move toward a functional strategy which puts the emphasis on the relationship of man with his surroundings and in which the physical, spiritual, and social aspects of man are united.

603. BOEKENSTEIN, Bronwyn. A study of the existence of attributes of the protestant work ethic in leisure participation. M.S. in Recreation, 1976, 89 p. (P. Ford)
10 concepts representative of the protestant work ethic were selected from the literature. A checklist questionnaire was developed around groups of leisure activities, a series of work-oriented alternatives for leisure participation (representing the 10 protestant work ethic concepts) and an equal no. of leisure-oriented alternatives. Ss were 90 U of OR students. Responses were analyzed by % and favored leisure-oriented alternatives (62.36%) over work-oriented alternatives (35.44%).

604. BONALEWICZ, Richard M. The effects of ethanol consumption and a six week training program on the rat's ability to metabolize ethanol. Ph.D. in Physical Education, 1976, 40 p. (E. Evonuk)
24 Sprague-Dawley rats were randomly assigned to 3 exp groups and a control group (6 rats/group). Treatments consisted of alcohol injections and no exercise, alcohol injections and exercise, no alcohol injections and exercise, and no alcohol injections and no exercise. After receiving intraperitoneal injections, the animals exercised by swimming 20 min/day 5 days/wk for 6 wks. Blood alcohol clearance rates were determined for all animals before and after the 6 wk treatment period. Results indicated that there were no significant differences in the $\overline{X}$ hourly rates of ethanol metabolism of the various groups.

605. BRUMEL, Ronald. The meaning of running for junior high school athletes and its relation to improvements in performance. M.S. in Physical Education, 1975, 73 p. (B. McCue)

606. CRAMER, Harold A., Jr. Social status of elementary school children as related to fitness level, participation in outside activities, and parental influences. M.S. in Physical Education, 1976, 84 p. (J. Broekhoff)
88 4th and 6th grade children were administered a sociometric questionnaire examining team and friend criteria, and a battery of physical fitness tests. Questionnaires were sent to each S's

parents. Positive, low to moderately high r's were obtained between measures of social status and physical fitness variables, with girls showing the stronger relationships. Boys whose fathers participated in organized physical activities at least several times per mo or whose parents rated their son's preschool physical development as above average exhibited higher levels of social status. Both boys and girls whose fathers rated their own sports skill as above average, whose mothers participated in unorganized physical activities several times/mo, or whose parents rated their child's current physical development as above average had higher physical fitness levels. Girls whose parents rated their daughter's preschool development as above average also had higher fitness levels. No relationships were found between S's social status or physical fitness levels and parental participation in scholastic sports, parental interest in physical activities, S's order of birth, S's participation in extracurricular activities, or parental opinion of coed physical activities for their children.

607. DHAFAR, Abdulrahman A. A comparison of the physical fitness level of students at King Abdulaziz University in Saudi Arabia with American college students. M.S. in Physical Education, 1976, 58 p. (E. Reuter)

608. FINDLAY, Hilary A. The development of amateur sport in Ontario through Federal and Provincial Government initiative. M.S. in Physical Education, 1976, 119 p. (B. McCue)

609. HOUSE, Karen. A comparison in effectiveness of camp counselors who have participated in a counselor-in-training program with camp counselors who have not. M.S. in Recreation, 1976, 42 p. (P. Ford)

The job effectiveness of camp counselors who had participated in counselor-in-training (CIT) programs was compared with that of camp counselors who had not participated in such programs. 3 Camp Fire Girl camps located in OR provided 42 Ss. 21 had previously participated in a CIT program, and the comparison group of 21 had not. The evaluation instrument used was a rating scale of 11 performance objectives. Scoring was done on a continuum scale. Tests of significance were applied to the relationship found in comparing the 2 groups' end-of-season evaluation scores. In the comparison, the null hypothesis, that there was no significant difference between groups, was rejected in 5 out of 11 items as well as in the total score.

610. INDIRA, Nambiarveedu. Investigation of changes, if any, of swim conditioning and yoga classes on breath holding and vital capacity. M.S. in Physical Education, 1976, 92 p. (E. Wooten)

611. KANTOLA, William W. Opinions and preferences of visitors toward alternatives for limiting use in the backcountry of Sequoia and Kings Canyon National Parks. M.S. in Recreation and Park Management, 1976, 83 p. (P. Ford)

1248 overnight backcountry visitors to Sequoia and Kings Canyon National Parks were asked their opinions and preferences toward alternatives for limiting backcountry use. The alternative receiving the most widespread support, 81 % in favor, was that minimum impact be required through stronger pollution laws and enforcement. A majority of visitors were opposed to a lottery system for obtaining wilderness permits and to a charge for entering the backcountry, 81% and 74%, respectively. Visitors prefer a trailhead control management system in which ½ of the permits are issued to those who wait a turn in line. In the system, some of the permits should be mailed to the visitor in advance of the wilderness trip, while the remainder of the permits should be issued at trailhead contact stations. Visitors also prefer that group size be limited to 15 persons.

612. LEE, Frieda. A study of sex differences in locus of control, tennis expectancy for success, and tennis achievement. Ph.D. in Physical Education, 1976, 70 p. (B. McCue)

The existence of sex differences in locus of control and expectancy of success in a physical skill achievement such as tennis, the effect of class membership (coed class, same sex class) on expectancy of success and on skill performance, in tennis, and the degree of relationship between locus of control and tennis were determined. Collected for each S (55 men, 49 women) enrolled in 4 beginning university tennis classes were: 6 locus of control scale scores as assessed by 2 administrations of the Levenson Internal, Powerful Others, and Chance Scale, 2 Dyer Wallboard pretest scores (expectancy and performance), and 1 Dyer Wallboard posttest score (performance). Results revealed a significant sex difference in tennis performance but not in locus of control nor expectancy for success. Men and women in coed classes reported a significantly lower $\overline{X}$ expectancy score than their respective counterparts in the same sex classes. Men and women in the coed classes also exhibited higher, though not statistically significant, $\overline{X}$ performance scores than their counterparts in the same sex class.

613. MASCHETTE, Wayne E. The design of an instrument to measure the ability of children to recognize patterns and transpose them into motoric behavior: A developmental study. M.S. in Physical Education, 1976, 81 p. (J. D. Adler)

614. MC CRACKEN, Paul W. An evaluation of men's intramural programs in selected community colleges in Eastern Canada during the 1974-1975 school year. M.S. in Physical Education, 1975, 265 p. (J. Borchardt)

615. MOORE, Ian A. The effects of barefootedness, negative heel and positive heel shoes, on walking gait and posture. M.S. in Physical Education, 1976, 50 p. (L. Osternig)

616. MULFLUR, Edward F. The effect of a movement set and a reaction set on the combined act of reaction and movement. M.S. in Physical Education, 1976, 30 p. (J. Adler)

617. SKRATZKY-SZALAY, Kristina. Assessment of electromyographic feedback on the motor control of selected muscles in spastic cerebral palsy individuals. Ph.D. in Physical Education, 1976, 105 p. (L. R. Osternig)

A technique of muscle control training using immediate auditory EMG feedback from selected muscles was assessed with spastic diplegic cerebral palsy individuals. 4 Ss, 3 males and 1 female, participated in a single S design with multiple baselines across behaviors and its 3 replications. Ss received auditory analogue feedback training during 20 sessions for the exp leg, while the control leg was trained without feedback during the 1st 10 sessions. Results showed an increase in active range of motion (ROM) after 10 sessions of from 20% to 500% for the exp limbs when compared to the initial ROM, while the control limbs stayed at pretraining levels. At the end of the exp period, the control limbs revealed an increase of from 33% to 450% over initial ROM. Retention of acquired ROM was maintained over intervals of 5 and 9 wks with Ss I and IV, while Ss II and III started losing their acquired ROM during retention periods. Learning of a relaxation response in the spastic gastrocnemius followed a negatively accelerated curve. The results of this investigation have demonstrated that EMG feedback training can increase active ROM of the ankle joint in selected spastic diplegic cerebral palsy Ss.

618. STEVENS, William D. The effects of class size and practice distribution of learning motor skills of elementary school children. M.S. in Physical Education, 1976, 42 p. (K. Rankin)

619. SULLIVAN, Jerry J. A study of the current practices of physical education in the Catholic elementary and secondary schools of Western Washington. M.S. in Physical Education, 1976, 93 p. (J. Borchardt)

620. TALLY, Francis A. The relationship between directional turn and dominance. M.S. in Physical Education, 1976, 55 p. (J. Adler)

621. TODD, Adrian. A comparison of the effectiveness of descriptive teaching and problem solving in the learning of kayak skills. M.S. in Physical Education, 1976, 98 p. (E. Reuter)

622. TRIPPS, D. G. Changes in group structure and individual social status within upper elementary physical education classes following traditional and individualized programs. Ph.D. in Physical Education, 1976, 186 p. (J. Broekhoff)
2 groups of 60 pupils from upper grade classes in an ele school in OR, underwent separate programs of PE for a period of 9 mo. A control group took part in a traditional program, based upon large group, skill oriented, command-directed activities, while the exp group was given an individualized program which emphasized movement-oriented, self-directed activities, conducted in small groups. Sociometric tests were administered to both groups to assess the degree to which physical performance variables influenced the social status of the Ss. These tests were also used to determine the effect of the individualized program in creating greater cross-sex awareness and association and in producing a more homogeneous social structure within the whole group. Analysis of the data led to the conclusion that an individualized program can reduce the influence of performance variables upon peer status for the "friend" criterion, but is not effective in reducing the demands of physical competency in social status with respect to "team" choices. Such a program can, however, encourage cross-sex attitudes and can be effective in modifying the structure of the class, by creating a more homogeneous status structure for friend acceptance.

623. WOLFE, Leonard S. Investigation of techniques for teaching severely retarded adults selected postural skills. M.S. in Physical Education, 1976, 31 p. (L. Osternig)

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AUSTIN, TEXAS (Waneen Spirduso)

624. AUFDERHEIDE, Susan K. A sequential comparison of the simple reaction time of educable mental retardates and intellectually normal children. M.Ed., 1976.

625. CHAMBERS, Shirley J. The factor theory of retardation applied to motor performance. M.Ed., 1976

626. CHILDRESS, Robert G. The contribution of beginning handball to cardiovascular fitness in college men. M.Ed., 1976.

627. COONS, Ronald C. The relationship between motor performance and selected intellectual and social abilities in severely developmentally disabled children. M.Ed., 1976.

628. DICKEY, Elizabeth A. Parental influences on the throwing and jumping development of three, four, and five-year-olds. Ph.D., 1976. (R. Malina)

629. FOSTER, Carl C., Jr. The relationship of selected physiological, training, and performance measures to distance running performance. Ph.D., 1976. (J. Daniels)

630. HUTCHINSON, Graham C. Reliability of measuring oxygen consumption during submaximal running among trained and untrained individuals. M.A., 1976.

631. MOSS, Karan A. Age at menarche and family characteristics of participants and nonparticipants of interscholastic sports. M.A., 1976.

632. MOSS, Raymond F. The effect of training on fasting levels of serum cholesterol and triglyceride. Ph.D., 1976. (H. Bonner)

633. TAM, Alex C. The effects of multi-ball training on oxygen consumption. M.Ed., 1976.

634. TATE, Charlotte A. The effect of chelating agents of the ^{45}calcium uptake of mitochondria isolated from fatigued and rested skeletal muscle. Ph.D., 1976. (H. Bonner)

635. THOMPSON, Rachel J. A comparison of age changes in motor performance of educable mentally retarded and intellectually normal boys between the ages of six and eleven. Ph.D., 1976. (D. Dobbins)

636. WRIGHT, Betty L. Selected health legislation of the Lyndon Baines Johnson administration, 1964-1968, and its implications for secondary school health education. Ph.D., 1976. (J. Haag)

637. YARBROUGH, Richard A. The effects of different types of training on running performance. M.A., 1976.

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SALT LAKE CITY, UTAH (Robert O. Ruhling)

638. ADAMS, Garry B. An assessment of health awareness among selected high school students and parents within the southwestern Utah health district. Ph.D. in Health Science, 1976, 226 p. (M. Kreuter)

639. BARTA, Anita M. Selected recreational activity preferences of selected native American high school students. Ph.D. in Leisure Studies, 1976, 150 p. (O. Hunter)

640. BOOHER, James M. South Dakota high school football injury survey. Ph.D. in Health Science, 1976, 113 p. (M. Kreuter)

641. CHASE, Marilyn. Relationships between selected biological rhythms and performances of professional women golfers. Ph.D. in Physical Education, 1976, 150 p. (K. Henschen)

642. DANIEL, William T., Jr. An investigation of the success of the player draft in the National Football League from 1968 to 1972. Ph.D. in Physical Education, 1976, 243 p. (K. Henschen)

643. DEITRICK, Ronald W. Retrogression and the erythrocyte. M.S. in Physical Education, 1976, 85 p. (R. Ruhling)

644. EDWARDS, Margie E. Programming therapeutic group activities for children. Ph.D. in Leisure Studies, 1976, 211 p. (L. Cruse)

645. FENGER, Thomas A. An epidemiological assessment of patient origin and destination patterns, Volume I: Utah; Volume II: Salt Lake County. Ph.D. in Health Science, 1976, 681 p. (R. Dwore)

646. FIGONE, Albert J. Differences in personality traits between baseball players at three selected levels of competition. Ph.D. in Physical Education, 1976, 222 p. (K. Henschen)

647. GINES, Deon. Evaluation of nutrition counseling by assistant dieticians in a hospital. M.S. in Foods and Nutrition, 1976, 50 p. (L. Pettit)

648. HALL, Larry T. Analysis of selected physiological variables and selected biological rhythms in the performance of track and field competitors. Ed.D. in Physical Education, 1976, 164 p. (K. Henschen)

649. HAYES, Weldon G. Social class of university wrestlers. Ph.D. in Physical Education, 1976, 86 p. (K. Henschen)

650. HOLMES, David L. A comparison of leisure attitudes and characteristics of group and individual sport parachutists. Ph.D. in Leisure Studies, 1976, 92 p. (J. Moore)

651. HUNGER, Darryl K. Self-conceptual changes caused through physical education activities. M.S. in Physical Education, 1975, 89 p. (J. Ewers)

652. IRVIN, Melva E. A comparison of the performance of primary grade students on self concept, locus of control, and motor creativity in two different physical education programs. Ph.D. in Physical Education, 94 p. (S. Beveridge)

653. JOSIE, Darrell H. A comparison of the effectiveness of selected methods of instruction in driver education. Ed.D. in Physical Education, 1976, 81 p. (O. Hunter)

654. KAUTH, William O. Biorhythms and acute myocardial infarction. Ph.D. in Health Science, 1976, 104 p. (M. Kreuter)

655. MOROHOSHI, Yutaka. Recreation practitioners in correctional institutions: Their functions and program operations. Ph.D. in Leisure Studies, 1976, 112 p. (J. Moore)

656. MORTON, Max L. Joint laxity in high school and junior high school football players: A risk factor in knee injuries. Ph.D. in Physical Education, 1976, 64 p. (R. Ruhling)

657. NOLAN, Harold J., Jr. The Lower Platte River in eastern Nebraska as a national recreation area. Ph.D. in Leisure Studies, 1976, 264 p. (J. Moore)

658. RAY, Ollie M. Biographies of selected leaders in tap dance. Ph.D. in Physical Education, 1976, 410 p. (B. West)

659. SHANAHAN, William J. An evaluation of the Fries Inventory as a predictive instrument for prospective college football players. Ph.D. in Physical Education, 1976, 70. p. (K. Henschen)

660. SIMMONS, Terry D. A feasibility study of the recreation and tourism potential of a restored historic railway from Kearney to Fort Kearney State Historical Park. Ph.D. in Leisure Studies, 1976, 155 p. (L. Cruse)

661. TIMMRECK, Thomas C. The relationship between stress and mental health in the work life span of Mountain Bell employees. Ph.D. in Health Science, 1976, 79 p. (G. Braza)

662. WARD, Robert K. Factors influencing the choice of leisure activities desired in centers by senior citizens. Ph.D. in Leisure Studies, 1976, 265 p. (L. Rockwood)

663. WARREN, Steven E. Written communication a supplemental method to doctor-patient communications. M.S. in Health Science, 1976, 65 p. (R. Dwore)

664. WELLS, Douglas I. A comparison of three shot-put training methods. M.S. in Physical Education, 1976, 46 p. (K. Henschen)

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LONDON, ONTARIO, CANADA (A. V. Carron)

665. ALLARD, Raymond. *The effect of facility sharing agreements on the availability of arenas and gymnasia for physical education and recreation in selected Southwestern Ontario cities*. M.A. in Physical Education, 1976, 106 p. (R. Barney)

The facility sharing agreements between boards of education (BOEs) and municipal rec depts (MRTs) in selected cities in southwestern Ontario were analyzed. The main hypothesis stated that facility sharing agreements between the BOEs and the MRTs would increase the availability of arenas and gymnasia for PE and rec programs. Sub-hypotheses stated that written contractual agreements between BOEs and MRTs would provide the greatest degree of availability of arenas and gymnasia for PE and rec programs; that a combination of verbal and written contractual agreements between the BOEs and MRTs would provide a lesser degree of availability of facilities than the written contractual agreements; and that a verbal agreement between the BOEs and MRTs would provide a lesser degree of availability of facilities than either the written contractual agreement or a combination of verbal/written agreement. Findings permitted the acceptance of the main hypothesis, while sub-hypotheses 1, 2, and 3 were rejected. Generally, findings indicated that the agreements (regardless of the type) positively increased the degree of availability of arenas and gymnasia for PE and rec programs.

666. ASHLEE, Joan. *Growth hormone response to exercise and its application in testing for growth hormone deficiency*. M.A. in Physical Education, 1976, 132 p. (D. Cunningham)

Growth hormone (HGH) response to submax and max exercise was studied in 39 hockey players (age = 10 yrs) in pre and post season. Venous blood samples were analyzed for glucose, HGH and insulin at the end of treadmill (100% VO_2 max) and bicycle ergometer (70% VO_2 max) tests and immediately following a hockey game. There were no differences in wt-adjusted VO_2 max values for competitive and house league players. Plasma glucose values increased significantly after the treadmill test and after the game. There were no significant changes in plasma insulin levels with exercise. X peak HGH levels rose significantly from pre-exercise levels after all 3 test conditions. An investigation of the feasibility of using exercise as a screening test for HGH deficiency was also carried out (*N*=28, ages 4-18 yrs, all short statured). In addition, 16 of the children underwent sequential arginine and insulin tolerance tests (ATT and ITT). There was no difference in $\bar{X}$ peak HGH values stimulated by exercise, ITT or ATT. In both groups of *Ss* (ice hockey players and short stature children) only max exercise of at least 10 min was capable of stimulating HGH secretion to a level that is clinically meaningful.

667. BEARPARK, Robert. Geographical factors affecting the recruitment of association football talent in the English Football League. M.A. in Physical Education, 1976, 110 p. (B. Petrie)

The nature of football talent productivity and inter-regional recruitment practices in the English Football League were determined. Regional development of talent and the inter-regional movement of players was determined on the basis of the region of the player's home background, present club, and previous club. After data analysis, the following conclusions appeared justified: the North, Yorkshire and North West regions of England emerge clearly as the most productive regions in relation to football talent playing in the Football League. The most marked inter-regional migration of talent takes place from the north of England and Scotland into the midland and southern regions. All regions lose talent at a high rate, the North region in particular. Only 3 regions out of 10 retain sufficient talent to provide for over 1/2 of their own personnel needs. Most migration of talent takes place between neighboring regions. Regions do not differ signficantly in their recruitment patterns. Recruitment patterns cannot be determined purely on the basis of division or club status; Level of inter-regional recruitment appears to be a function of division status and regional productivity, i.e., the lower the club status and regional productivity, the greater the inter-regional recruitment of talent. Existing recruitment practices appear to be erratic and irrational and would seem to mitigate against the clubs of the lower division.

668. COOK, Susan. An inquiry into undergraduate philosophy of physical education course experiences in Canadian universities. M.A. in Physical Education, 1976, 192 p. (E. Zeigler)

The current state of philosophy of PE and sport course experiences in undergraduate degree programs in Canada was described. 3 basic problems were examined: the status of courses in philosophy of PE and sport; the availability of courses in the "mother discipline" (philosophy) and/or philosophy of education; and the professional and educational background and scholarly contributions of the various course instructors. A questionnaire was sent to representatives in the area of philosophy of PE and sport (or foundations and/or principles) across Canada. Responses were classified according to Osterhoudt's taxonomy for research concerning philosophy of PE and sport. Results indicated that few philosophy or philosophy of education courses were required or recommended. The instructors of philosophy of PE and sport have generally not had a background in this area; do not belong to professional associations whose concerns directly relate to the area of philosophy of PE and sport; have not published articles in the area either during the yr or the 2 yrs previous to the study. ½ of the courses surveyed dealt with principles and/or foundations; ½ with philosophy of PE and sport. Although 70% of the foundations and/or principles courses listed objectives, these courses did not essentially deal with philosophy of PE and sport. The recommendation of the 1966 national conference, that the subject matter of philosophy (in PE) change from educational philosophy and principles to ". . . an understanding of. . . philosophical concepts as related to man-in-movement," has not occurred in all undergraduate degree programs in Canada.

669. DARLING, Douglas. An examination of the Canadian Amateur Diving Association Inc., 1966-1975. M.A. in Physical Education, 1976, 160 p. (D. Semotiuk)

The development of the Canadian Amateur Diving Association Inc. (CADA) from 1966 to 1975 was examined. The 6 subproblems included an examination of the development of the organization and administration; evolution of philosophy regarding competitive programs; influence of federal government programs and policies; CADA's position and role in international diving affairs; the role of private sector finance in the development of Canadian diving; and significant events, individuals, and programs. It was concluded that leadership has been a major problem in development. The viewpoint has been that additional funding will solve all problems. The funds provided have not been used effectively as a result of a lack of spending guidelines. The ultimate control of the CADA does not rest in the hands of the members of that Association. Communications are the major problem facing the CADA.

670. DAVIS, Glen. The effect of varied rest periods during interval training upon aerobic and anaerobic fitness. M.A. in Physical Education, 1976, 115 p. (R. Eynon)

The effect of varied rest periods during interval training upon aerobic and anaerobic fitness in 23 male volunteers (ages 19-28 yrs) was investigated. 3 exercise groups and 1 control group were randomly formed. Ss were tested before and after training on: max VO$_2$, O$_2$ debt, peak blood lactate concentration, and time of ride to exhaustion on the bicycle ergometer (load = 350 watts). The training sessions consisted of 15 1-min work periods with varying rest intervals. The short rest group (SRG) had 40 sec, while the medium (MRG) and long rest group (LRG) had 80 and 120 sec between efforts, respectively. The intensity of work was set at 100% of each individual's VO$_2$ max based on max aerobic tests before training and at 4 wks. All groups trained on the bicycle ergometer 3 times/wk for 8 wks. The training regimens resulted in significant increases in max VO_2 (l/min, ml/kg.min) for all groups. The SRG and MRG improved significantly in O_2 debt, peak blood lactate,and time of ride to exhaustion. There were no significant differences among any of the exercise groups on the improvement of any of the selected cardio-respiratory or anaerobic measures. A strong trend, however, was exhibited for the shortest rest groups to increase most in terms of the variables examined.

671. DENNIS, Paul. The interactive effects of mental toughness and experimental success/failure upon performance outcome. M.A. in Physical Education, 1976, 37 p. (A. Carron)

The interactive effects of mental toughness and exp conditions of success and failure upon performance outcome were examined. Additionally, the proportions of variance attributable to the personality trait mental toughness, the situation success and failure, and their interaction were compared. Mental toughness was assessed through the Motivation Rating Scale and was administered to 238 male university Ss. 1 group of respondents from the top 20% of the distribution (high mental toughness, N=40) and another from the lower 20% (low mental toughness, N=40) were selected as Ss. The exp design was a 2 X 2 factorial with 2 levels of mental toughness (high vs low) tested under 2 conditions (success vs failure). It was found that the conditions of success and failure did not produce a differential response in performance for high and low mental toughness groups. Furthermore, there was high variability in performance after the exp condition of failure. However, this variability was independent of the trait of mental toughness. Finally, within the context of the exp design, the largest proportion of variance (98%) was unaccounted for.

672. GARLAND, John. A study of the intramural sport programs in selected colleges of applied arts and technology in the province of Ontario, 1975-76. M.A. in Physical Education, 1976, 137 p. (A. Mikalachki)

A descriptive analysis of the intramural sport programs offered in the Colleges of Applied Arts and Technology (CAAT) in Southern Ontario during the 1975-76 school yr was provided. It was concluded that, in most cases, coordinating the intramural program was an ancillary responsibility combined with teaching or duties in the inter-college program. Those responsible for programming intramurals do not take full advantage of student involvement in the administrative decision making of the intramural program. In most community colleges, accurate student participation records are not kept. Based on an analysis of student participation levels, those intramural directors concerned with increasing the no. of participants in the program can justify: increasing the amount of time spent on intramural responsibilities; increasing the operating budget; and increasing the no. of activities offered in the program. In general, the CAAT are providing rec athletic experiences for the student commensurate with the facility, staff, and financial status common to each college.

673. GREAVES, Helen. An examination of the sports development policy of the Canadian Amateur Swimming Association 1961-1976. M.A. in Physical Education, 1976, 162 p. (D. Semotiuk)

The sports development policy of the Canadian Amateur Swimming Association (CASA), 1961-1976 was examined. It was noted that the CASA has a national program consisting of many inter-related areas. These areas have grown considerably since 1961 because of increased government assistance and strong leadership. A total program has been provided for the membership (not confined to a national team, but rather incorporating a development program from the club, to the provincial section and to the national body). The CASA has had strong leadership guiding its programs.

674. HARE, Richard. An examination of the current physical activity patterns and motives towards participation of former minor hockey players. M.A. in Physical Education, 1976, 87 p. (A. Carron)

The relationships between the degree of former minor hockey participation and present motivations toward hockey, current participation in physical activity and general motivations toward physical activity were examined. 4 groups were investigated: a group that never participated; a group that withdrew before 12 yrs of age; another group that withdrew between 12 and 16 yrs of age; and a group that still was participating. No significant relationship was noted between the former degree of participation in minor hockey and motivations toward hockey, current participation in physical activity and general motivations toward physical activity. As auxillary problems, preferences for rec vs competitive activities; preference for team vs individual sports; and the importance of physical activity in relation to other priorities in daily life were compared for the 4 groups. It was found that individuals who withdrew from competitive hockey preferred individual sports of a rec nature and attached less importance to physical activity than those Ss still participating in hockey.

675. LAMB, Howard. *A comparison of cinematographic and force platform techniques for determining take-off velocity in the vertical jump*. M.A. in Physical Education, 1976, 125 p. (J. Stothart)

The validity of applying the impulse-momentum relationship to vertical force-time records as a technique for measuring the vertical take-off velocity of the center of gravity during a vertical jump was assessed. The usefulness of the variable's power and impulse as descriptive measures of take-off velocity was also determined. The relationships of various temporal and kinetic variables to vertical take-off velocity were also investigated in the 25 male university students. 2 independent, but synchronized, techniques were used to measure the vertical component of velocity of the center of gravity during a vertical jump. 1 technique was a classical cinematographic analysis. The 2nd involved the application of the impulse-momentum relationship to a vertical force-time record derived from a force platform. 4 general conclusions were warranted. The application of the impulse-momentum relationship to the vertical force-time curve is a valid technique for determining the velocity of the center of gravity during a vertical jump. In considering individuals, the vertical impulse at take-off is a more accurate descriptor of the vertical take-off velocity than are measures of power. In considering groups, the ratio of the vertical take-off impulse to the mass of the body is a more accurate descriptor of the vertical take-off velocity than are measures of power. The study of isolated kinetic and temporal variables yields little information about jumping potential. Rather, it is the study of the complex interactions among these variables which is important in understanding and improving jumping ability.

676. LEIGH, Lucinda. *Social and educational backgrounds of 1975 Canadian alpine ski racers*. M.A. in Physical Education, 1976, 114 p. (B. Petrie)

Descriptive data were provided concerning the social backgrounds, academic achievement, and educational aspirations of the Canadian National and International level alpine ski racers. Interest among ski racers in combining education and ski training programs was examined as a supplemental problem. It was found that, when compared to the Canadian population, ski racers exhibited an over-representation of high parental occupational status, Protestantism, early placement on family birth order, and large family size. When education was considered, skiers were over-represented in grades 9-13 and reported higher educational aspirations than Canadian youths regardless of sex, father's education, or family size. When compared internally, a significant association between the highest ability level and

Protestantism appeared overall while skiers from Quebec and Labrador exhibited an association with Catholicism. Skiers did not differ among themselves on parental Blishen Occupational Index scores, residence, birth order, family size, academic achievement, educational attainment, educational aspirations, or providers' educational attainment. Skiers felt education had suffered because of skiing. However, they also indicated that skiing had suffered because of education. Most skiers were in favor of a combined racing and educational system.

677. MC CRIMMON, Donald. A comparison of internal and continuous training effects on selected central and peripheral cardiovascular responses to exercise in women. M.A. in Physical Education, 1976, 254 p. (D. Cunningham)

3 groups of 5 women (18-25 yrs) participated in a 12 wk training program. Cardiovascular responses to interval (ITG) and continuous (CTG) training were studied in 2 groups, before and after 4, 8, and 12 wks of training 4 times/wk. A control group was assessed before and after 6 and 12 wks of the program. The CTG initially worked for 20 min/session at 70% of VO_2 max. The ITG initially worked at 90% of VO_2 max and alternated 2 min work with 1 min rest periods. The duration of each training session for the ITG was set to equalize the total work done by both groups. Work intensities for both groups were increased 5% per wk to final values of 80% (CTG) and 100% (ITG) of VO_2 max. VO_2 max increased significantly (20.5% in the CTG, 23.2% in the ITG) after 12 wks of training in both groups. In the CTG the increase was attributed to approximately equal % increments in cardiac output (8.2%) and a-$\bar{v}O_2$ diff (8.9%). In the ITG, a large initial (after 4 wks) increase in SV (17 ml at 65% of VO_2 max) and a significantly faster $\bar{X}$ systolic ejection rate (82 ml/sec increase) were observed. After 8 and 12 wks of training, the stroke volume and $\bar{X}$ systolic ejection rate decreased toward control levels, while the a-$\bar{v}O_2$ diff increased significantly (20.0%). Systolic time intervals were unchanged in the ITG, but a trend toward a lengthened left ventricular ejection time was noted in the CTG. The results indicated that, in response to high intensity training, women may demonstrate similar cardiovascular adaptations to training as have been observed for men. In addition, the type of training used may affect the time course of the cardiovascular adaptations to short term endurance training.

678. ROSE, Ainsley. An historical account of Canada's participation in international ice hockey: 1948-1970. M.A. in Physical Education, 1976, 125 p. (R. Barney)

An historical account of Canada's participation in international ice hockey, both World and Olympic, was compiled. The study focused on the influences and trends of various time periods which had an effect on the entire spectrum of international hockey from a Canadian viewpoint. It was noted that from 1920-1970, Canada had oscillated from a state of unparalleled success in the 1920s to one of dismal failure in 1970, culminating with the withdrawal of Canada from international ice hockey. It was concluded that the control and development of the professional National Hockey League contributed significantly to the declining success of Canada's participation in international ice hockey. Canada's involvement in international ice hockey was not of great public concern, but rather held strong local and regional interest. The Canadian Amateur Hockey Association lacked the policies, administration and interests in carrying out its responsibilities as the governing body for international ice hockey in Canada, thereby contributing to Canada's declining success in World and Olympic Hockey. Canada's declining success in international ice hockey paralleled the growth and success of European teams, and was reflected and resulted in a corresponding decline of Senior Amateur hockey in Canada.

679. ROSENFELD, Hartmut. A comparison of left ventricular function during exercise in young men of low, moderate and high aerobic fitness. M.A. in Physical Education, 1976, 111 p. (D. Cunningham)

The left ventricular function (during upright submax exercise) of young men who differed in their aerobic capacity was compared. Left ventricular systolic time intervals and cardiac output were measured in 3 groups of 10 males ($\overline{X}$ = 24 yrs), who represented low (VO_2 max = 42-45 ml/kg min), moderate (VO_2 max = 50-56 ml/kg min), and high (VO_2 max = 59-70 ml/kg min) levels of aerobic fitness. Cardiac output was measured using the indirect Fick (CO_2) rebreathe procedure and systolic time intervals were measured from simultaneous non-invasive recordings of the carotid arterial pulse, heart sound and EKG. Ss were studied at steady state HR of approximately 110, 130, and 150 bpm. At all HR, the fitter groups tended to have short values for pre-ejection period (significant only at 150 bpm). Significantly larger SV, longer left ventricular ejection time (LVET) and lower values for the ratio of pre-ejection period divided by left ventricular ejection time (PEP/LVET) were found in the high fitness group compared to the low fitness group. The $\overline{X}$ systolic ejection rate (SV/LVET) was also significantly greater at all 3 HR in the high fitness group compared to the low fitness group. It was concluded that the larger SV of the high fitness group was related in part to a longer ejection period (per beat of the heart) and in part to a faster rate of systolic ejection.

680. SHOGAN, Debbie. *The nature of man in contemporary American physical education philosophy*. M.A. in Physical Education, 1976, 111 p. (E. Zeigler)

The works of people writing in PE philosophy since 1960 were examined to determine which theories of man's nature are most commonly expressed by those who work with ideas in the PE profession/discipline. An attempt was made to ascertain if those writing in PE philosophy offer ideas to the practitioner regarding the establishment of a positive theory of man and if so what that theory is. After documenting 4 theories on the nature of man in the historical literature, writings in PE philosophy were related to them. It was found that an Existential Man and a Pragmatic Man are supported most frequently, but more importantly it was revealed that the subject of man's nature has been almost ignored in the PE philosophy literature.

681. SMITH, Dan. *The effects of minor hockey league competition on aggression in young boys*. M.A. in Physical Education, 1976, 67 p. (A. Carron)

Effects of minor hockey competition on aggression in young boys was examined. The Buss-Durkee Inventory (BDI) was administered to bantam (13-14 yrs) Competitive (C) (N=48), and House League (HL) (N=48) players under 3 test conditions: a practice session, and before and after a game. The no. of illegal aggressive acts committed by and against each S during a game were recorded to provide a behavioral measure of aggression. It was concluded that in an unaroused state, C players scored higher on the behavioral components of the BDI; HL participants higher on the attitudinal components. Regardless of level of competition, participation in hockey did not affect Total Aggression. Assault increased and Indirect Aggression decreased from pre- to post-game. Further, low aggressive HL players showed a decrease on Aggression and Total Aggression from pre- to post-game. Low aggressive C athletes and high aggressive HL boys increased on these same 2 measures. C hockey players demonstrated more aggressive behavior than the HL participants. There was little relationship between the no. of illegal aggressive acts committed by versus against minor hockey players. In addition, there was a low correlation between the direct behavioral measure and the BDI Total Aggression score.

682. THOMSON, Marion. *A comparison of food habits of young hockey players: Influence of age and competition level.* M.A. in Physical Education, 1976, 121 p. (G. Wearring)

How participation in clubs and athletics affects HE habits, especially those of food intake, was examined. Recent studies suggest that the more time a child spends away from home, the poorer his/her food intake becomes. The effects of age and level of competition in hockey on the food intake and eating patterns of 111 male hockey players (ages 10-14 yrs) were investigated. The 24 hr recall method of recording food intake was used. Food intake was then scored using a scoring system similar to that used in the Nutrition Canada Survey. Neither age nor level of competition in hockey affected food intake scores. Scores for the total group supported findings of prior studies. Intakes of fruit, vegetables and bread were rated as only "fair" or "poor". Consumption of foods from the dairy and meat group were "good". Total intake scores were similarly low. No differences in eating habits (where meals were consumed, how many meals were skipped, who prepared the meals, and how frequently vitamins were consumed) were revealed when the age and competition level were considered.

683. VAIL, Susan. The effect of female athletic involvement on femininity and self-esteem. M.A. in Physical Education, 1976, 76 p. (B. Petrie)

The relationship between female athletic involvement (intercollegiate athletic participation vs PE faculty enrollment) and the 2 dependent variables of femininity and self-esteem were examined. 100 females from UWO were tested. A negative relationship existed between female athletic involvement and femininity. Specifically, the greater the athletic involvement, the lower the femininity scores. PE students were found to differ significantly from intercollegiate athletes on selected masculinity-femininity subscales. No statistically significant relationship was found between female athletic involvement and self-esteem. It was concluded that athletic participation was only 1 of many factors influencing the self-esteem of females.

684. WALTON, Yvette. The life and professional contributions of Ethel Mary Cartwright (1880-1955). M.A. in Physical Education, 1976, 198 p. (R. Barney)

The contributions to PE made by Ethel Mary Cartwright were documented to acquaint readers with the personal qualities and philosophy of 1 of the pioneers of the profession in Canada. A chronological format was used, incorporating a topical arrangement within time periods when Miss Cartwright was engaged in several areas of activity simultaneously. It was found that her major contributions were: establishing 1 of the first PE specialist training courses within university framework; her influence on the philosophy of women's competitive sport in the direction of female sports administered, coached and officiated by women; her influence in organizing the profession of physiotherapy on a national scale; and her promotion of professional associations at local and national levels. The general conclusion was that Ethel Mary Cartwright was a pioneer leader whose professional activities influenced the direction taken by the profession of PE in 20th century Canada.

UNIVERSITY OF WISCONSIN-MADISON
MADISON, WISCONSIN (J. G. Wolf)

685. ANDERSON, Margaret B. Muscle patterning in the overarm throw and tennis serve: An electromyographic and film study of skilled and less skilled performers. Ph.D. in Physical Education and Dance, 1976, 212 p. (J. C. Waterland)

Selected spatial and temporal characteristics of the overarm throw and the tennis serve as measured from EMGs and film views of 9 women performers were investigated. 3 skilled tennis servers (110-125'/sec), 3 skilled throwers (80-90'/sec), and 3 individuals with high degrees of skill in both activities participated. Each of the 9 right-handed performers was filmed performing a minimum of 6 trials of the overarm throw and 6 trials of the tennis serve. Surface electrodes were used to record the electrical activity from the clavicular portion of the pectoralis major, anterior and posterior parts of the deltoideus, infraspinatus, serratus anterior, the upper, middle, and lower fibers of the trapezius, and the right and left externus abdominis obliquus. Regardless of skill level, the 9 Ss employed common joint and segment movements and used, with minor exceptions, the same no. of muscles during the preparatory, projection, and follow-through phases in the 2 skills. There was a difference in the duration during which the muscles controlled the movements in the 2 activities. The tennis serve took longer to perform and involved a different sequential coordination of muscular activity than did the overarm throw. Differences in the sequence in which muscles either initiated or ceased their activity were greater in individuals judged to be skilled in both sports than in those judged to be skilled in just 1 of the 2 sports. The temporal differences between the 2 overarm activities suggest that, if performers perceive time differences between 200-800 msec, then reference to, or practice in, the overarm throw may not be a good method to gain expertise in the tennis serve.

686. BIERI, Ronald P. An examination of cardiovascular endurance and static strength of middle school boys and girls of differing maturational ages as determined by hand-wrist x-ray. M.S. in Physical Education and Dance, 1976, 57 p. (E. G. Stafford)

The relationship between maturational age and the variables of cardiovascular endurance, elbow flexion, and knee extension was determined. With the examination of these variables, the study was also designed to promote curriculum development especially with regard to coed and individualized instruction. 49 middle school 7th and 8th grade boys and girls were tested. Maturational age was obtained by skeletal x-ray and static strength data were obtained by performance of the elbow flexor and knee extensor muscle groups using a cable tensiometer. Endurance data were obtained from performance scores on a 12-min run-walk test. Data analysis indicated: maturational age was not predictable for adolescent boys and girls from cardiovascular endurance performance scores; cardiovascular endurance performance scores, and elbow flexion static strength measurements correlated higher with maturational age for boys than for girls; knee extension static strength measurements correlated higher with maturational age for girls than for boys; static strength measurements correlated higher with maturational age than did cardiovascular endurance performance scores for girls; and cardiovascular endurance performance scores correlated higher with maturational age than did static strength measurements for boys. Results indicated that coed classes should be carefully weighed, particularly when activities suggested require the same strength and endurance ability.

687. BRENNAN, Mary A. An investigation into the relationship between creative ability in dance, field independence-dependence, and creativity. Ph.D. in Physical Education and Dance, 1976, 296 p. (M. Fee)

The relationships among creativity ability in dance, field independence-dependence, and selected attributes of creative persons were examined. The Rod and Frame Test, Embedded Figures Test, Guilford tests of divergent thinking, surveys of personality traits and biographical information, experts' ratings of creative ability in dance, and 3 movement performance measures of dance creativity were used as sources of data. 61 female dance majors from the U of W-Madison served as Ss. Dance creativity was evaluated by an instrument on which experts rated the Ss on the criteria of fluency, originality and flexibility, and 3 movement performance tests based on Guilford's Structure of Intellect construct. Responses to the 3 performance tests were videotaped and rated by judges on the above criteria. ANOVA was used to determine the reliability of the movement measures. A gamma coefficient association matrix was used to provide input data for a cluster analysis and a multidimensional scaling technique. A descriptive analysis provided further interpretation of the relationship between the 19 variables. Conclusions: no meaningful relationships exist among the 3 constructs pertinent to the study; 2 of the movement performance measures show potential as valid and reliable measures of dance creativity if further refined; the 2 methods of evaluating dance creativity tend to identify the same individuals as more or less creative; and the more creative dancers were not more field independent nor characterized by more creative attributes than the less creative dancers.

688. CLARK, Jane E. Age-related differences in response decision processing. Ph.D. in Physical Education and Dance, 1976, 92 p. (L. E. Halverson)

The execution of many motor skills requires the performer to operate under rigorous temporal limitations. Previous research has shown that young children are slower than older children and adults in the performance of time-dependent tasks. An investigation was conducted as to whether response demands of these tasks and the time required to process response decisions decreases with age. Using an information processing paradigm, 2 response demand variables assumed to affect response decision processing states were manipulated. The 2 variables were spatial stimulus-response compatibility and response discriminability. Ss from 3 age groups (Kindergarteners, 4th graders, and adults) performed a 2-choice RT task under 1 level (high or low) of each response demand variable. A 2 X 2 X 3 (compatibility X discriminability X age) ANOVA showed main effects for age and compatibility. Response discriminability did not significantly affect RT performance of Ss of any of the age groups tested. The only interaction that was significant was age X compatibility. Results of the exp support the hypothesis that age differences in time dependent tasks may be attributable, in part, to age differences in the processing of response decisions. Support for this hypothesis is found only in the findings from 1 of the response demand variables, spatial S-R compatibility.

689. DISHMAN, Rod K. A comparison of opinion among physical educators to selected purposes of human movement. M.S. in Physical Education and Dance, 1975, 83 p. (A. E. Jewett and J. G. Wolf)

In a study partially funded by the PE division of AAHPER, 200 male physical educators and 200 female physical educators were randomly selected from the memberships of NCPEAM and NAPECW. Ss were requested by mail to respond to a questionnaire derived from purposes of human movement as defined by the Purpose-Process Curriculum Framework. Results from a 75% return indicated that college and university physical educators, as represented by members of NCPEAM and NAPECW, in large part supported the PPCF's organization of 22 purposes of human movement under 7 Major Concept categories. There were no significant differences between males and females in this support. Also, there was a high relationship (RHO=.964) between males and females in the rating of the Major Concept categories as to importance for a college or university PE general program.

690. COLLEN, Jeffrey. Metabolic changes in competitive swimmers over an entire season. M.S. in Physical Education and Dance, 1976, 67 p. (J. Mullin)
Metabolic changes in competitive swimmers at the U of W over an entire swimming season were quantified. The swimmers performed 4 1,000-yd effort swims at 4 different times during the season as well as 2 progressive treadmill runs to estimate max aerobic power. Expired gases were collected during the 4 1,000-yd swims and the 2 treadmill runs. These were analyzed for O_2 and CO_2 content. Changes in VO_2, lactic acid accumulation, body wt, O_2 extraction, ventilation, and efficiency (ml of O_2 consumed during every m swim), were observed and conclusions drawn as to the effects of training on the 10 Ss. Through the 1st 3 swimming tests, the VO_2 increased approximately 8% and during the taper portion of the season, the 4th trial, the VO_2 decreased. Efficiency was greatest at the end of the season after the taper. The patterns of the other variables were difficult to explain.

691. ENSIGN, Cynthia P. The effects of range, frequency and duration of movement on rhythmic synchronization. Ph.D. in Physical Education and Dance, 1976, 210 p. (M. Fee)
Effects of differences in range, frequency and duration of movement on voluntary rhythmic synchronization, which is defined as the capacity to coordinate 2 or more events in a space-time or rhythmic continuum, were examined. The coordination required was that of a knee action sequence of flexion and extension actions as a movement event, with a series of metronome ticks as sound events. Based on a theory of rhythmic perception, rhythmic synchronization was assumed to depend upon sensory discrimination and anticipation. It was assumed that success would be revealed in the degree to which learned knee joint angles were reproduced (joint angle accuracy, JAA), and in the degree to which moments of arrival in their approximations were timed simultaneously with metronome sounds (time of arrival accuracy, TAA). 80 female Ss were randomly assigned to 8 treatment combinations consisting of 2 ranges of movement determined by angular distance between 2 target joint angles, 2 frequencies of movement determined by metronome rate, and 2 durations of movement determined by movement quality, performing 4 trials of 5 continuous flexion-extension actions to the metronome. A goniometer attached to a supporting knee registered joint angles, which were recorded on polygraph records with the occurrences of metronome sounds. Accuracy (CE) and consistency (VE) were calculated for JAA and TAA measurements. The $\bar{X}$ was found relative to each target joint angle in each trial, and the error scores were submitted to an ANOVA. Location of target joint angles and metronome rate were found to affect JAA

but angular distance and movement quality were not. For TAA, metronome rate was found to be the predominant influence. Movement quality and angular distance resulted in differences only at the lower metronome rate. The location of target joint angles was found not to affect TAA.

692. HAGBERG, James M. *The kinetics of oxygen consumption and blood lactate levels in exercise and recovery*. Ph.D. in Physical Education and Dance, 1976, 190 p. (J. Mullin)
Using a breath-by-breath computer VO$_2$ system, the kinetics of O$_2$ consumption were investigated at the onset of exercise, in steady-state, and in recovery. The O$_2$ repayment following work of different duration was also examined. All Ss completed a 5 and 20 min bicycle ergometer work bout at 50, 65, and 80% of VO$_2$ max and at 900 kpm/min. Each run was followed by 15 min of 150 kpm/min recovery. The kinetics of VO$_2$ at the onset of exercise were dependent on the relative workload, while the kinetics in recovery were independent of workload. A rise in VO$_2$ from the 5th to 20th min of the 20-min runs occurred at all work intensiti[illegible] Results revealed that the rise could be attributed to heat accumulation, increased ventilatory cost, and to elimination of blood lactate. Alactacid repayment increased as workload increased and was not related to work duration. Lactacid repayment was minimal except at the 80% relative workload and was elevated in runs which exhibited blood lactate levels 10mg% higher in the 20-min run. Total repayment was larger in the 20-min runs which elicited significantly larger lactacid repayments.

693. HANSON, Martha G. *Coronary heart disease, exercise, and motivation in middle-aged males*. Ph.D. in Curriculum and Instruction, 1976, 192 p. (W. Southworth)
The effects of regular exercise on reducing risk factors in cornary heart disease and motivation of men in an exercise program was determined. The exp group consisted of 30 middle-aged male professors judged to be at risk to coronary heart disease in 1967, and who engaged in a regular supervised exercise program for 7 yrs. This group was compared to a control group of similar men who were also judged to be at risk to coronary heart disease in 1967, but who elected not to participate in the organized exercise program. It was concluded that of the 5 risk factors to coronary heart disease, BP, serum cholesterol level, and wt were reduced. 2 elements were identified as motivating the men to join an exercise program, and 4 elements were identified as keeping the men in the program for an extended period (7 yrs).

694. KORELL, Diane M. [illegible] comparison of seriation and multidimensional scaling; two techniques for validating constructs in physical education. Ph.D. in Measurement and Evaluation, 1976, 157 p. (M. Safrit)
Solutions were obtained and examined by the techniques of seriation, 1-dimensional multidimensional scaling, and 2-dimensional multidimensional scaling as varying degrees of error were introduced into particular data sets. A sample of 4 different sized matrices were selected to represent situations that could be applicable to research problems in PE such as ordering developmental sequences, course objectives, and levels of behavior in curriculum hierarchies. Kendall's Tau (τ) values were computed between the ordering resulting from the matrix with no error and all other solutions for a particular matrix size to compare the solutions using various techniques, matrix sizes, and degrees of error. ANOVA of the 4 X 3 X 3 design of the study yielded 3 significant main effects with no significant interactions. These included the effects of matrix size, random error, and scaling technique. τ values served as the dependent measures with 10 replications per cell. The main effect of size indicated that the larger matrix sizes produced the most accurate results indicated by higher τ values when compared to the smaller matrix sizes. The main effect of random error indicated that as error increased, τ values decreased. The main effect of technique indicated that the technique of seriation produced slightly more accurate results than 1- and 2-dimensional multidimensional scaling.

695. MC CULLAGH, Penny D. Model status and attention: A partial test of social learning theory. Ph.D. in Physical Education and Dance, 1976, 96 p. (F. Z. Cumbee)
The influence of model characteristics on observer performance on a motor task and the attribution of such effects to the attentional stage of observational learning were determined. Whether model characteristics affected actual amount learned or merely performance was also examined. There were 2 levels of model status (high and low), and Ss were made aware of model status either before or after Bachman ladder demonstration. The assumption was that performance differences in the post cue condition would have to be due to some other process besides attention. The performance of 3 control groups was also examined. 2 of these groups received immediate incentives and the 3rd group received no incentive and no demonstration. Results of phase 1, in which all of the above groups (18 in each and randomly assigned) participated indicated that Ss performed significantly better ($p < .01$) after observing a high as opposed to low status model. The lack of significant cuing effect indicated that model characteristics did not exert their prime

influence on the attentional phase of observational learning, at least for the particular task used. During phase 2 of the exp, Ss were offered an incentive to perform as well as possible. The no-demonstration group continued to perform without an incentive or demonstration. Since there were no differences between groups in phase 2, the findings suggest that performance, but not actual amount learned, was affected by the model status manipulation.

696. SCHAPEKAHM, Susan L. The electromyographic study of the overhead volleyball serve performed by skilled athletes. M.S. in Physical Education and Dance, 1976, 72 p. (J. Waterland)

It was determined electromyographically whether a refinement in muscle patterning occurs in an overhead volleyball serve during a competitive season. Observations were made from 2 skilled athletes on the Women's U of W Intercollegiate Volleyball Team. 4 shoulder girdle muscles, the anterior and posterior deltoid, the clavicular portion of pectoralis major, and the infraspinatus, were unilaterally recorded through bipolar surface electrodes. Conclusions: there was no systematic improvement in skill recorded from the volleyball skill test used during the study; there was no observable change in the overt movement pattern recorded during the filmed periods; the no. of correct answers received from the observation of the electromyographic records suggests that a refinement in muscle patterning during the post-season filming periods was evident, and a refinement in muscle patterning could imply that even though changes in the observable movement pattern may not be detectable, coaching and practice had an effect on the skilled performers in the study. Because the electromyographic recordings were similar, the difference could be due to familiarity with the filming situation and the fact that the Ss became more relaxed.

697. STREMLAU, Duane L. Tortlaw: Negligence and liability in physical education with reference to higher education. Ph.D. in Physical Education and Dance, 1976, 230 p. (K. Peterson)

The law of negligence and liability was analyzed in relation to instruction, supervision, and care of the injured in PE programs, particularly in higher education. An historical review of legal literature was conducted to include within a single source all relevant terminology, principles, and litigation. Pertinent state supreme court decisions upon which precedents have been established, regardless of the educational level at which they occurred, were briefed and included. A legal source for reference was compiled to assist physical educators in their efforts to develop safer programs and to avoid legal confrontation at a time when negligence suits are apparently more prevalent. The standard of care which is currently being demanded of PE teachers is reasonable. Physical educators must, however, accept the recent developments in tort law with understanding, a positive attitude, and determination to continue efforts to improve programs, prevent injury, and avoid the attachment of legal liability.

698. WALLACE, Stephen A. *The coding of location: A test of the target hypothesis*. Ph.D. in Physical Education and Dance, 97 p. (G. Stelmach)

1 prediction of the target hypothesis is that location reproduction is not solely dependent upon proprioceptive feedback of the criterion movement. The 2 exps reported were designed to test this notion by requiring that *Ss* reproduce a location with the opposite limb to the 1 used for criterion presentation. Under these conditions, it was argued that stored proprioceptive feedback of the criterion location could not be directly used for the reproduction act. An assumption was that this switched-limb technique forced the *S* to rely upon a more abstract location code derived from the proprioceptive signals of the criterion location. Results from both exps indicated that when direction of movement was the same for both the criterion and reproduction movements, reproduction accuracy between switched-limb and same-limb conditions was equivalent. These results supported the position that location reproduction could occur without the aid of specific criterion location proprioceptive feedback, and thus that reproduction was based on an abstract location code. The findings indicate some support for the target hypothesis.

VIRGINIA COMMONWEALTH UNIVERSITY
RICHMOND, VIRGINIA (Robert Davis)

699. ISAACS, Larry. *A motor development program's effect on reading performance and perceptual-motor ability of first grade children*. M.S., 1976. (R. Davis)

The effects of a motor development program (MDP) on perceptual-motor (PM) ability and reading performance of 1st grade children were examined. 44 1st grade children (ages 74-103 mo, $\bar{X}$ age = 81 mo) served as *Ss*. Pretest examinations included the Wide Range Achievement Test, the Draw-A-Person test from the ABC Inventory, and the Purdue Perceptual Motor Survey. The exp group of 22 *Ss* received 3 30-min periods of MD training/wk based on the theories of Kephart which emphasize eye-hand coordination, balance—both static and dynamic, basic gross motor movements, and body awareness which was subdivided into the following 3 areas: body parts, laterality, and directionality. Except for the MDP, neither the exp group nor the control group received any organized PE activity. Following the 12 wk exp period, a t test revealed that a significant difference existed between the 2 groups in both body image and PM ability in favor of the exp group. However, no significant difference was found between the 2 groups on reading performance. Results seem to support the specificity of training concept. It appears that a MD program based on the theories of Kephart would be of value for improving the body image and PM ability of 1st grade children.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
BLACKSBURG, VIRGINIA (W. McCubbin)

700. MC ADAMS, William W. The relationship between selected characteristics of health education programs and the acquisition of student health knowledge in secondary schools of the state of Virginia. Ed.D., 1976, 95 p. (M. Driscall)

Kilander-Leach HE Knowledge scores of 702 SHS students in VA were obtained by standard survey techniques to investigate the relationship of selected variables to the acquisition of HE-related topics. A HE research questionnaire filled out by respective teachers (N=50) was used to determine teacher preparation, type of schedule, use of facilities and equipment, and curriculum content of A, AA, and AAA size schools. Size of school produced the strongest relationship to HE knowledge acquisition (r=.46) with students from the AAA schools demonstrating significantly higher scores than those from A or AA schools. However, of the remaining factors investigated, only curriculum content level differentiated students' HE knowledge scores; the greater the no. of topics covered in the HE classrooms, the higher the $\bar{X}$ student score. In addition, there was some indication that the separate classroom approach was superior to the format combining HE with PE. Finally, the scores of students in VA did not compare favorably with national norms, ranking only in the 10th %ile. Thus, it was recommended that a more extensive HE curriculum be considered for state-wide adoption and that closer supervision of instruction programs be instituted.

WASHINGTON STATE UNIVERSITY
PULLMAN, WASHINGTON (K. A. Penman)

701. ALLEN, Dennis R. A comparison of an active games method and a traditional method of learning the language arts concept of punctuation at the second grade level. M.S. in Physical Education, 1976, 37 p. (M. Enberg)

2 exp classes (N=40) of 2nd grade students participated in a mo long language arts program, wherein punctuation concepts were

introduced verbally and/or visually and were then reinforced by using active games as the medium. 6 active games, incorporating punctuation concepts, were developed for use. The control group (N=23) of 2nd grade students was taught punctuation concepts in the traditional workbook manner. Modified versions of forms 5 and 6, level 9, of the Iowa Test of Basic Skills were used as the pretest and posttest, respectively. Group $\overline{X}$s on pretests and posttests of the control class and exp classes were treated by ANCOVA. The findings demonstrated that the exp classes performed better on the posttest than did the control class.

702. BLAYLOCK, Helen L. Perception, of children aged three to nine years, of form and figure in a three-dimensional presentation. M.S. in Physical Education, 1975, 87 p. (M. Enberg)

Ss were 413 children from 3 intact groups: cooperative preschool, Headstart, and grades K-2. The investigator designed 4 3-dimensional items: block 1 had different surfaces; block 2, colors; blocks 3 and 4, geometric designs. The items reflected the developmental literature and were constructed so that Ss had to manipulate a missing portion of a block to match a comparison. ANOVA revealed that age was a significant variable in speed of correct response. A t test applied to performance Xs showed older (7-9 yrs, 4 mo) children to be superior to younger (3-6 yrs, 11 mo) children on all items ($p < .001$). The younger children did not perform significantly better on tactile and color than on the 2 geometric figures as hypothesized. ANCOVA revealed some significant interactions for age and school, grades within schools, and teachers within grades within schools, but there were no sex differences in performance.

703. EVANS, Gail Grant. Composing and testing behavioral objectives in the cognitive, affective, and psychomotor domains for the breaststroke. M.S. in Physical Education, 1974, 74 p. (M. Enberg)

An effective statement of behavioral objectives by integrating the cognitive, affective, and psychomotor domains into a hierarchy for the breaststroke was written and determination made if the behavioral objectives would be an effective device in the learning of the breaststroke in intermediate swimming classes for college women. The attainment of general and individualized objectives was determined by the instructor and trained judges. The $\overline{X}$ no. of class days needed by the students to attain a general objective increased with the difficulty of the general objective. With 2 exceptions, the SDs for class days needed by the students to attain a general objective were all less than 2.00. Students attempting and attaining all general objectives were

83 and 89% in the 2 classes, and 100% in both classes attained at least 20 of the general objectives after operating on the corresponding individualized objectives. Results indicated that the objectives were effectively presented in an integrated hierarchy and that they were effective as a learning device.

704. FITZ-GERALD, Raymond J. A study to determine the effect of repeated practice of set patterns of tennis skills on the performance of male varsity tennis players at Washington State University. M.S. in Physical Education, 1974, 89 p. (M. Enberg)

The effect of repeated practice of set patterns of tennis skills on the performance of 12 male varsity tennis players during the 1973-74 season was evaluated by 3 methods: round-robin tournament rankings, modified Hewitt Tennis Achievement Test for speed and accuracy of serve, and the Fitz-Gerald Tennis Strokes Synthesis Patterns. The latter instrument was designed for the study as a means of measuring the ability of Ss to synthesize basic skills of tennis into winning patterns of stroke play. The treatment consisted of 9 30-min sessions of repeated practice on 6 predetermined patterns of tennis play, 3 times/wk for 3 wks. Within the limitations of the study, both the Hewitt and Fitz-Gerald instruments were reliable, but not valid indicators of playing ability. The learning curves of the 4 selected ground stroke-volley patterns and 2 selected service patterns suggested that learning was taking place for the top 5 ranked players.

705. GITTENS, Boyd T. The sprinter's crouch start on all-weather running surface using blocks, rear block only and no blocks. M.S. in Physical Education, 1976, 49 p. (S. Adams)

The sprint times of experienced sprinters using 3 variations of a 4-point crouch start on an all-weather running surface were compared. 10 experienced male sprinters at WSU (ages 18-25) were used as Ss. Each S was given 9 starts, 3 each on the block start, the rear block only start, and the no block start. Data were collected from the starting line to 30 m, and between 10 m and 30 m. Results revealed that no significant difference existed between the rear block only start and the no block start at any of the distances studied. At a distance of 10 m from the starting line, the block start is superior to the other starting methods studied. At a distance of 30 m from the starting line, no significant differences could be detected between the sprint times obtained using the block start and those obtained using no blocks. It was also found that no significant differences existed between the 3 starting methods studied for the running times between 10 m and 30 m.

706. JOHNSON, Harold A. Speech interference levels in some gymnasium areas at Washington State University. M.S. in Physical Education, 1977, 51 p. (K. A. Penman)

The acoustical suitability with respect to speech interference of various sports spaces at WSU was determined. The areas investigated included gymnasia, swimming pools, handball courts, a dance studio, and a field house. The acoustical measurement chosen was the Preferred Octave Band Speech Interference Level (PSIL) because it appears to be the best single measure to indicate the quality of vocal communications during instruction in PE classes. Results showed that the PSIL range was from 78 to 104 dB(PSIL). Results also indicated that the amount of speech interfering noise varies according to the type of activity occurring and that vocal instruction methods of teachers require modification with increases in noise levels. It appears that the acoustical suitability for instruction in the spaces tested was at levels much lower than would be acceptable for other educational spaces due to the high levels of speech interference.

707. MANN, Ralph V. A comprehensive computer technique to process human motion data—application to the flip long jump. Ph.D. in Physical Education, 1976, 179 p. (M. Adrian)

A comprehensive planar computer program (FILMDATA) was used to demonstrate an analysis and simulation procedure for general human motion. The complex sports movement of the flip long jump (FLJ) was used to demonstrate the procedure and to investigate the activity. After a preliminary analysis of the selected activity was performed to determine the boundary conditions of the activity, the simulation phase was begun. Each possible segment action was simulated and examined to determine the best reaction combination for the selected activity. Total body simulation was then accomplished by combining the selected segment actions. The final result was then examined to determine the feasibility of the total action as well as the performance capabilities of the selected motion. A flip jump ground phase technique using a modification of a normal leg running motion and a down and stop arm action was deemed the best technique for the activity. The forces, muscle moments, segment velocities and accelerations were all well within the performance capabilities of the human body, and the performance results were equal to those of world class jumpers. However, the problem of generating sufficient body rotation at takeoff necessitates precise timing of the body actions. Small timing errors result in the failure to generate sufficient body rotation to complete the flip during the air phase.

708. PRESCOTT, Pamela M. Criteria for the selection of games in grades one through five. M.A.T. in Physical Education, 1975, 49 p. (M. Enberg)

A statement of the criteria for Piaget's theory that could be applied to the analysis of games commonly played in the ele school was developed. The procedure involved 4 operations: a distillation from the Piagetian readings of the periods and characteristics of cognitive development of children, ages 6-11, development of examples of game behavior which matched these characteristics, identification of 5 games for each level of development on the basis of their joint appearance in 3 widely used ele school textbooks, and the analysis of the selected games in light of the periods, characteristics, and game behaviors. The games analyzed, which had been presented by the textbook writers without the aid of this cognitive development framework, nevertheless met the cognitive criteria established. Suggestions were offered for use of the criteria in selection of other activities and methods of presentation.

709. REEG, John P. A study of the professional preparational background of men and women high school coaches in the state of Washington. M.S. in Physical Education, 1976, 88 p. (S. Adams)

Questionnaires were sent to 67 SHS in WA representing 20% of the total no. of SHS in the state (334). 451 men and women coaches responded. Results indicated that the majority of respondents had been coaching less than 10 yrs. The majority of head coaches began their coaching careers as head coaches. The data also showed that the majority of the Ss had competitive experience in athletics, had taken PE courses related to athletic coaching, had attended 1 or more clinics, workshops, and/or seminar within the last 5 yrs and that less than 50% of them were members of professional associations or subscribed to professional journals relative to athletic coaching. 50.5% of the coaches were in favor of a committee to be established by the Washington Interscholastic Activities Association and the Superintendent of Public Instruction to study the possibility of requiring certification for athletic coaching.

710. RUSCH, Daniel C. Nature of samples used in physical education research at Washington State University. M.S. in Physical Education, 1976, 41 p. (K. Penman)

The nature of the distribution of scores on a single criterion variable for elective activity classes at WSU was determined. Furthermore, an attempt was made to determine the necessary sample size required for representativeness of these classes. Data were gathered by administering the standing broad jump to 502 male students. From that actual population, random samples were drawn and the theoretical population was formed. These 2 populations were then used in the evaluation of 4 subproblems. The 4 subproblems were investigated to determine if the actual samples and the theoretical samples conform to the normal distribution, if activity classes contain students whose physical abilities are comparable, if there is any statistical difference between actual class $\bar{X}$s and theoretical class $\bar{X}$s and the point where sample size *n* is "sufficiently large" to produce an acceptable level of sample representativeness. Results indicated that for the single criterion measured, the populations used in this study were normally distributed and no statistically significant differences existed between $\bar{X}$s of elective activity classes. Results also demonstrated that a sample size of 15-20, when gathered using random methods, will provide a representative sample of students electing to take activity classes.

711. SZYMANSKI, Joyce A. *Restrictive effects of ankle taping on balance*. M.S. in Phyiscal Education, 1976. (K. Penman)

The effects of 2 common methods of taping ankles, the Closed Basketweave technique and the Open Basketweave technique, on balance were determined. 51 *Ss* were selected from WSU women's athletic teams. The 3 treatments tested were Closed Basketweave technique of ankle taping, Open Basketweave technique of ankle taping, and no tape. A dynabalometer was used to measure *S*'s balance. The test consisted of keeping the platform of the dynabalometer balanced, so that the edge of the platform and base did not touch. Data collected from the 3 treatments were subjected to ANOVA and the Tukey procedure. Treatment A $\bar{X}$ of Closed Basketweave technique, Treatment B $\bar{X}$ of Open Basketweave technique, and Treatment C $\bar{X}$ of no tape were all found to be significantly different. The conclusion was reached that ankle taping did hinder the *S*'s ability to balance, and the 2 taping methods affected *S*'s performance differently.

712. WHEELER, Lynn E. *The effectiveness of directing the learner's attention to her kinesthetic feedback in learning to perform two gymnastic stunts*. M.S. in Physical Education, 1974, 59 p. (M. Enberg)

20 college women, enrolled in a beginning tumbling class, were randomly assigned to 2 control and 2 exp groups. Each *S* performed 9 trials of each stunt over a 5 wk period for the handstand forward roll and a 3 wk period for the front handspring. The control group received teacher feedback regarding performance of the stunts. The exp group received a checklist directing their attention to the kinesthetic feedback. Each trial was videotaped and later judged by a panel of 3 judges. The judges were trained, and their reliabilities ranged from .88 to .99. Inspection of learning curves revealed that the exp group

did not exhibit a more rapid learning trend than the control group in the handstand forward roll but did improve more rapidly in the front handspring. Exp group Ss were able to interpret kinesthetic feedback from the slow stunt, the handstand forward roll, more readily than from the fast stunt, the front handspring. The exp group showed greater retention after a 2 wk rest period than did the control group on the handstand forward roll.

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713. BRAINE, Robert S. The collection, analysis and comparison of human urine between sedentary and conditioned male caucasians as to the variation in sodium, potassium and chloride composition. Ed.D. in Physical Education, 1976, 60 p. (R. Kurucz)

714. BROOKS, Dana D. The relationship between personality, locus of control, leadership style and team success. M.S. in Physical Education, 1976, 90 p. (W. Alsop)

715. CROSBIE, Ronald L. Effect of an indivdualized development motor activity program on the perceptual motor performance and IQ scores of selected trainable mentally retarded children. Ed.D. in Physical Education, 1976, 87 p. (R. Kurucz)

716. DAVIS, Deborah L. An effect to determine the maximum pulse rate for female athletes for use in cardio-respiratory conditioning. M.S. in Physical Education, 1976, 40 p. (R. Kurucz)

717. ENMAN, David M. Overt aggressive responses of college males to female and male opponents in a competitive motor task. M.S. in Physical Education, 1976, 57 p. (A. Ostrow)

718. HAUSDORF, Walter F. Achievement motivation and goal-setting behavior in relation to performances in competitive laboratory and real life motor activities. M.S. in Physical Education, 1976, 85 p. (A. Ostrow)

719. HUNT, Randy R. A time comparison between the grab start and the track start in swimming. M.S. in Physical Education, 1976, 74 p. (R. Kurucz)

720. ISRAEL, Richard G. The effects of aerobic, anaerobic, and pulse workout exercises on selected physical fitness parameters, plasma cholesterol and plasma triglyceride levels in college males. Ed.D. in Physical Education, 1976, 86 p. (R. Kurucz)

721. TAKOVICH, John M., Jr. The future of physical education in higher education in the United States: A delphi study. Ed.D. in Physical Education, 1976, 189 p. (W. Alsop)

722. ZIMMER, William R. Comparisons of selected personality traits between intramural basketball officials and athletes. M.S. in Physical Education, 1976, 101 p. (A. Ostrow)

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MACOMB, ILLINOIS (G. W. Hermann)

723. BOSTON, Charles R. Interval sprints and isokinetic squat extensions for the improvement of 40 yard dash times and vertical jump scores of college football players. M.S. in Physical Education, 1976, 51 p. (W. Bradley)

College football players (N=48) were randomly divided into 4 groups. Group I used the interval sprint program consisting of a series of repeats of 70, 40 and 20 yds with alternated rest periods. Group II, isokinetic squat extensions, used the Mini-Gym power squat rack at 0.5 ft/sec with 1 set of 35 reps. Group III used both the isokinetic squat extensions and the interval sprint program. Group IV, control, along with all other Ss, participated in the winter conditioning program twice/wk for 6 wks. In addition, Groups I, II and III participated in the exp program 3 days/wk for 6 wks. All Ss were pre- and posttested on the 40 yd dash and vertical jump. The following statistical treatments were used to analyze the data: dependent t test, Pearson product moment r, 1-way fixed effects ANCOVA and the Tukey follow-up test. Groups I, II and III showed a significant increase in vertical jump performance. For the 40 yd dash, Groups I, II and III improved significantly when compared to the control group. Groups I and III showed a significant improvement when compared to group II but there was no difference between Groups I and III.

724. BRAINERD, Martha A. The effects of aging on the trainability of women. M.S. in Physical Education, 1976. (E. Chapman)

The effects of age and training upon the aerobic power of women 18-23 (N=21) and of older women aged 40-55 (N=19) were determined. Ss completed a standardized treadmill test to determine max aerobic power. Parameters measured included O_2 consumption, V volume, CO_2 production, HR and total time on treadmill. Ss in each age group were randomly assigned to either the exp or control treatment. Exp Ss completed a 6 wk training program and at the end of the training program, all Ss were retested using the same aerobic test. A 2-way ANOVA was used. Max VO_2 was significantly higher in the younger Ss as compared to the older Ss. A significant difference in max V volume gains was also found with respect to age; however, the older exp group appeared to make the largest gains. After training, the exp group was significantly different from the control group with respect to gains in total time on treadmill. No significant differences in gains in total time on treadmill were displayed between the 2 age groups. Results indicated that age and training both have an effect on aerobic power of women.

725. BUSCH, Mary E. A comparison of practices and opinions between elementary and secondary school teachers in west central Illinois public schools regarding the use of values clarification. M.S. in Health Education, 1976, 155 p. (J. Neutens)

The practices and opinions of ELE and secondary school teachers in west central IL public schools regarding the use of values clarification were compared. A proportionate stratified random sample of teachers (N=450) for each of the participating regions was selected. A fixed alternative questionnaire consisting of 76 items was used to collect data and through the use of X^2 it was determined if significant differences existed. Findings indicated that ELE and secondary school teachers used values clarification as part of their teaching methodology. There were differences, however, in their approach to values in the classroom. It appeared that ELE school teachers were more concerned with being certain that their students chose the "right" values. They seemed to have felt responsibility to help students form their values and have been more structured in their approach to values in the classroom. Secondary school teachers did not attempt to limit the choices made by their students. These respondents attempted to encourage responsibility in their students and to determine the importance of student values.

726. CADA, Dean A. A survey of summer basketball programs in class AA high schools in Illinois. M.S. in Physical Education, 1976, 43 p. (L. Dittus)

The extent of summer basketball programs in class AA SHS in IL was determined by means of a questionnaire mailed during April 1975. A subpurpose compared Chicago area SHS summer basketball programs with non-Chicago area SHS. Ss were 75 class AA SHS head varsity basketball coaches in IL. Findings appear to warrant the following conclusions. Summer basketball programs are dominant in IL class AA SHS. The majority of Ss felt that summer programs are a necessity to develop competitive SHS basketball programs. Summer basketball camps are growing in popularity although a majority of the Ss did not operate summer camps. Many athletes, from varied financial backgrounds, may receive athletic instruction. Instruction classes were operated by less than a majority of head basketball coaches due to lack of facilities, enrollments and conflicting activities. The majority of IL class AA SHS are presently participating in summer basketball leagues.

727. DAVIS, Ronald L. A comparison of hostility levels of Dayton Gems hockey fans and nonfans and the effect of the game on the fan's hostility levels. M.S. in Physical Education, 1976, 30 p. (J. Colgate)

This study attempted to determine if the hostility level of an ice hockey fan is greater than that of a nonfan, and if this hostility level increases or decreases as a result of viewing a professional ice hockey game. Data relative to ice hockey fan hostility were collected by means of a pre- amd post-game administration of the 3 subscales of the Buss-Durkee Hostility-Guilt Inventory. Data relative to the nonfan were collected by the same means. The pre-game test was given to 187 fans before the contest began and the post-game test was given to 123 fans after the completion of the game. The nonfan test was administered to 109 Ss in a shopping center located 1 mi from the ice hockey arena. Data were analyzed using a 1-way ANOVA for each of the 3 groups. There was no statistically significant difference between the nonfan, pre-game fan and post-game fan, for males and females combined, for males only nor for females only. The $\bar{X}$ hostility level did increase from the nonfan to the pre-game fan to the post-game fan, although the increases were not found to be statistically significant.

728. DINTLEMAN, Fred A. A comparison of two hitting training methods. M.S. in Physical Education, 1976, 43 p. (W. Bradley)

24 male jr varsity SHS baseball players were divided into 3 groups to compare 2 types of training, hitting from the batting tee and hitting from a pitching machine, for improving hitting performance. All 3 exp groups were involved in a specific training program for a total of 3 wks, 5 days/wk. Group I Ss attempted to hit 50 pitches against the Dudley arm action pitching machine during each session, while Group II Ss attempted to hit 25 pitches against the pitching machine and 25 balls on a hitting tee. Ss in Group III were allowed to hit 50 balls on a batting tee during each session. The following statistical treatments were used: dependent t test, Pearson product moment r, and ANCOVA. The 4 dependent variables included total hits, fair hits, solid hits and fair solid hits. Group I Ss showed a significant $\bar{X}$ gain in the no. of total hits and solid hits. Ss in Group II showed a significant $\bar{X}$ gain in the no. of total hits, fair hits, solid hits and solid fair hits. Group III Ss showed a significant $\bar{X}$ gain in the no. of solid hits. ANCOVA revealed that the training groups showed no significant $\bar{X}$ gain in any of the dependent variables.

729. EBOMOYI, Ehigie W. The health implications of dam building in Nigeria. M.S. in Health Education, 1976, 82 p. (S. Fors)

A review of literature was done on the problems and benefits of dams to determine the HE implications of dam building in Nigeria. This historic review was organized chronologically and most of the data employed to identify specific HE problems were the published materials from the United Nations Demographic Year Book, World Health Organization, Nigerian Institute of Social and Economic Research and other Nigerian Governmental depts. The findings concentrated on 5 main areas: the economic benefits of dams; the prevalent diseases in Nigeria and their relationship to the waterlogged environment of the dam; the problem of stress due to displacement of settlers in the vicinity of the dam and pending resettlement of displaced people; the distortion of the ecosystem; and the role of the coordinated HE team and allied social workers. A coordinated team effort of experts in HE related disciplines and social work can assist administrators with decisions involving construction and the efficient operation of dams in Nigeria.

730. FRYE, Gregory L. A comparison of attitudes—christian and basketball coaches—toward basketball incidents. M.S. in Physical Education, 1976, 58 p. (J. Harris)

This study sought to determine if significant differences exist between attitudes of college basketball coaches at religiously affiliated institutions (N=8), with higher winning %ages (N=16), at perennial powerhouses (N=10) or with teams in competitive conferences and attitudes of clergymen (N=16). Clergymen's responses to an attitude survey were used as the basis for scoring and selecting items which discriminated as to ethical or unethical. Of the 24 original survey items, 14 survived the item analysis. The Mann-Whitney ANOVA warranted acceptance of the 4 independent variable null hypotheses. Results did not convince the researcher regarding the ethical standards of the 2 groups. The attitude/behavior inconsistency, use of a non-parametric statistic, false assumptions, and invalid comparison of 2 realities were discussed as factors affecting the outcome.

731. HOLT, Richard H. Fan hostility in relation to the observation of men's and women's college basketball games at Western Illinois University. M.S. in Physical Education, 1976, 35 p. (B. Yeager)

282 intercollegiate basketball fans were surveyed to determine if hostility increased or decreased in men and women as a result of observing aggressive basketball competition. Ss consisted of 110 men and 52 women at a men's game, and 44 men and 70 women at 3 women's games. The F for 3 subscales of the

Buss-Durkee Hostility-Guilt Inventory indicated no statistically significant difference between the groups.

732. HORN, Ellen B. The effect of heart sound recordings on heart rate and alpha rhythm. M.S. in Physical Education, 1976, 33 p. (E. Chapman)

The effects of heart sound recordings upon HR and alpha rhythm were determined. Ss were 18 females and 12 males from PE service classes. Each S participated in 3 exp treatments: listening to heart sound recordings of bradycardia and tachycardia, as well as serving as their own control. An electroencephalogram and PR were recorded for each S at the 1st, 5th, 10th and 15th min of each treatment. Results showed no significant differences between each treatment or between recording periods (observations).

733. HUNTER, Robert E. The effects of two isokinetic training programs on the vertical jump performance of male varsity college basketball players. M.S. in Physical Education, 1976, 32 p. (W. Bradley)

College basketball players (N=16) were randomly divided into 2 groups to compare the effects of 2 isokinetic training programs on vertical jump performance. Group I, the fast speed and high repetition group, exercised 4 days/wk, 3 days fast speed and 1 day slow speed. Group II, the slow speed and low repetition group, exercised 3 days/wk using slow speed and 1 day using fast speed. All Ss were tested on vertical jump performance at the beginning and conclusion of the 8 wk training period. The seated military press and the parallel squat were the 2 exercises used. Fast speed training consisted of 35 repetitions and slow speed training was exercising with 10 repetitions of both exercises. 4 statistical treatments were used including a dependent t test, a Pearson product moment r, an unweighted 1-way fixed effects ANOVA and the Newman-Keuls Test. The training programs for Groups I and II each showed a significant increase in vertical jump performance; however, the Group I $\bar{X}$ of 4.0 in. was significantly greater than the Group II $\bar{X}$ of 2.88 in. indicating that the fast speed and high repetition training method was a more effective method of increasing vertical jump than the slow speed and low repetition training method.

734. KAPLAN, Lawrence. Leader behavior of division II college head football coaches measured by the LBDQ-SELF in relation to effectiveness. M.S. in Physical Education, 1976, 63 p. (B. Yeager)

This study attempted to determine whether "win-loss" record was an indicator of effectiveness related to leader effectiveness as defined by the LBDQ-Self. Ss (N=84) were selected college head football coaches from schools representing NCAA Division

II football. The Leader Behavior Description Questionnaire-Self (LBDQ-Self) was used to analyze the coaches' leader behavior. The 2 dimensions of leader behavior used were consideration and initiating structure. There was no significant relationship between leader behavior of coaches and their "win-loss" record. The no. of coaches who scored above the $\overline{X}$ on consideration was comparable to the coaches who scored below the $\overline{X}$. The no. of coaches who scored above the $\overline{X}$ on initiating structure was comparable to the coaches who scored below the $\overline{X}$. Very few coaches had a leader behavior of high initiating structure and low consideration and a winning % of less than or equal to 50%. Most of the coaches had a leader behavior of high consideration and high structure with a winning % greater than 50%.

735. LEVERENZ, Larry J. Medical care of the Illinois high school athlete. M.S. in Physical Education, 1976, 37 p. (R. E. LaRue)

A questionnaire was used to obtain the attitudes and opinions of IL SHS ADs (N=76) concerning the treatment of athletic injuries at their school. Information obtained included the following categories: availability of a physician, role of coach in injury care, amount and type of rehabilitation equipment, no. of participants, concern of parents regarding injuries and attitude of AD toward hiring a certified athletic trainer for their district. It was found that smaller schools provided better coverage of girls' sports by a physician than larger schools. However, boys' sports received better coverage by a physician and trainers than did girls' sports. Most ADs were in favor of hiring a trainer but they did not view this as a real possibility in the near future. Money was the overwhelming drawback to establishing these new positions. The ADs appeared to need and want suggestions as to how a trainer could become involved in their athletic program.

736. MC KENZIE, Jean. Effects of the isokinetic training on the vertical jump performance of female volleyball players. M.S. in Physical Education, 1976, 49 p. (E. Chapman)

The effects of high-speed and high-repetition isokinetic training on the vertical jump performance of female collegiate volleyball players (N=24) were determined. Ss were randomly divided into 2 groups and all Ss in both groups were tested for vertical jump ability, quadricep strength, girth and skinfold size at the beginning and end of the study. 25 parallel squats were executed by the training group 3 times/wk on the isokinetic leaper. The training program was 6 wks in duration. Pearson product moment r was used to determine the influence of initial scores on gains, while a dependent t test was used to determine the significant difference of adjusted $\overline{X}$ gains within groups. A

1-way fixed effects ANCOVA was employed to remove variance due to pretest scores so that the variance due to treatments only could be examined. Findings indicated a significant increase in strength and jumping ability for the training group.

737. MEGGAS, Dale M. The effects of bylaw 12 on NCAA division I football teams. M.S. in Physical Education, 1976, 57 p. ([illegible]. Colgate)
The won-loss records of visiting and home NCAA Division I football teams for the 1974 (pre-bylaw 12) season and the 1975 (during bylaw 12) season were compared to determine if there was a significant difference in points scored per quarter by visiting teams after limitations on squad size were imposed. A 1-way ANOVA and the Scheffé Test were used to determine if there was a statistically significant difference for scores for each quarter for both home and visitors during the 1974 and 1975 seasons. Although bylaw 12 placed player limits (N=48) on the visitors and (N=60) on the home team for the 1975 season, visiting teams improved their winning percentages in 1975 over that of 1974. It was concluded that bylaw 12 did not adversely affect visiting teams in 1975.

738. MISKOVIC, Linda. The effect of the significant other and high and low skill level on the performance of the overhead clear in badminton. M.S. in Physical Education, 1976, 45 p. (B. Yeager)
The effect of the presence of a significant other at a high and low skill level on the performance of an overhead clear in badminton was examined. Ss were 63 female college students. High skill level Ss were ranked by the intercollegiate badminton coach and an intermediate badminton instructor. The lower level skill ranking included Ss randomly selected from beginning badminton classes. Ss were given a modified version of the Poole Forehand Clear Test. A 2-way ANOVA was used to determine differences between skill levels, differences between performances alone and performances in the presence of a significant other, and an interaction effect between skill level and the presence of a significant other. A significant difference was obtained between skill levels but not on the treatment variable nor on the interaction effect of skill and presence of a significant other.

739. MIX, Paul E. An analysis of the philosophical beliefs of selected elementary physical education instructors. M.S. in Physical Education, 1976, 61 p. (K. Pearson)
The philosophical-professional beliefs of selected primary and ELE PE instructors (N=93) from 21 school districts located in the northern Chicago suburbs were identified and compared. The instrument used to identify the philosophical-professional

beliefs was an opinionnaire developed in an earlier study. The opinionnaire consisted of 11 categories which were judged to be of primary importance to the physical educator. For each category 5 statements representing the philosophical positions of Aritomism, Realism, Pragmatism, Existentialism and Idealism were presented. Ss chose the statement which most nearly represented their personal beliefs. In addition, Ss were asked to record the intensity of their agreement and provide certain biographical background information. The type and intensity of responses were tabulated for total responses and all biographical areas. In addition, extent of apparent eclecticism was tabulated for all Ss and with respect to each biographical area. The majority (44%) of the responses was in the Pragmatic area. The remaining 4 philosophies were selected with relatively the same frequency for a X of 14% each. It was determined that the great majority (77%) of the Ss were eclectic in their philosophical-professional beliefs.

740. MORTONSON, Mark K. An evaluative inventory for the assessment of environmentally related behaviors exhibited by college students. M.S. in Health Education, 1976, 87 p. (J. Neutens)

A reliable and valid behavior inventory capable of assessing environmental practices was developed. Literature on environmental improvement or maintenance behaviors was surveyed for the development of a pool of behavior questions. These questions were then submitted to a panel of judges for validation as to their importance for inclusion in the survey instrument. The final behavior inventory was edited for testing and submitted to a group of students on a test-retest basis for determination of item reliability. Finally, results were analyzed to determine item reliability. 44 items of the behavior inventory were reliable and valid in assessing environmental practices, while the remaining 19 items were valid but not reliable for assessing group environmental practices. Since item reliability was determined for each item, those 44 items could be used in assessing group environmental behaviors.

741. PRICE, Rosalee. The relationship of playing time on self-concept and alienation of female intercollegiate softball players. M.S. in Physical Education, 1977, 116 p. (E. Docherty and R. Aten)

The relationship of softball playing time on self-concept and feelings of alienation of female intercollegiate softball players (N=23) was investigated. Ss were grouped as regular players (N=13) or substitute players (N=10) by means of calculating total playing time. Doudlah's self-concept statements were used to measure self-concept, while Dean's Alienation Scale or Public Opinion Questionnaire was used to measure alienation.

All exp groups engaged in the study for a period of 8½ wks. An intercorrelation technique was used to establish relationships between the pre- and posttest results of the following variables for each group: playing time and self-concept; playing time and alienation; alienation and self-concept scores; and self-concept and the pre and post subscales of Dean's Alienation Test ($p = .05$). Regular players' self-concept improved as they experienced an increase in playing time; playing time had no effect on alienation for regular players, for substitute players or for the entire group; only regular players tended to approach a significant relationship between self-concept and alienation; powerlessness contributed to the relationship of alienation and self-concept for regular players; self-concept was not affected by the alienation subscale, normlessness for any group; and self-concept appeared to be related to the alienation subscale of social isolation for substitutes only.

742. RICHART, A. Michael. Effects of concentric and eccentric training on vertical jump and muscular strength. M.S. in Physical Education, 1976, 50 p. (R. Gedney)
Ss enrolled in collegiate PE classes were used to determine the effects of a concentric and an eccentric training program on the vertical jump and also on concentric and eccentric leg strength of the quadriceps femoris muscle group. 2 groups, 1 concentric ($N=14$) and 1 eccentric ($N=14$), trained 3 days/wk for 8 wks and were pre- and posttested on all 3 dependent variables. The vertical jump was also tested every 2 wks throughout the training program. Dependent t tests, within groups, for all dependent variables showed that the gains were significant. The concentric group gains on the concentric leg strength variable were significant ($p < .05$). All other t values were significant at the .01 level. ANOVA of the between group $\bar{X}$s on the concentric leg strength variable was not significant. The eccentric leg strength variable indicated a significant F. A 2 X 4 repeated measures ANOVA of the $\bar{X}$ vertical jump scores indicated: there was no significant difference in training programs; there was a significant difference in median vertical jump scores across the 4 testing periods; a trend analysis indicated a highly significant linear trend across the 4 testing periods but no significant quadratic or cubic trend; and the interaction of treatments X trials was not significant.

743. SANDS, Colleen P. A comparison of personality traits in selected female athletes and nonathletes at three educational levels. M.S. in Physical Education, 1976, 35 p. (W. Lakie)
Personality characteristics of selected female athletes and nonathletes at 3 educational levels, 8th, 10th and 12th grade, were compared and differences analyzed among groups from each

grade level. 300 *Ss* ranged from 13-19 yrs of age. Names of all female interscholastic athletes and nonathletes were compiled and 50 athletes and 50 nonathletes at each grade level were selected for study. The Cattell 16PF was used to measure personality traits for "normal" subjects involved in social living and social interaction, and produced 16 separate raw scores for each *S* which were transferred to computer cards. Discriminant Analysis was used on the data. The univariate analysis revealed differences among the Xs on 3 scales of the 16 factors on the questionnaire. A Tukey *post hoc* comparison showed the 8th grade nonathletes tended to be more sober and serious than any other group, while the 8th and 10th grade athletes appeared to be the most enthusiastic and cheerful. The 10th grade athletes were described as good followers and dependent, while the 12th grade nonathletes and athletes preferred making their own decisions, showing resourcefulness and enjoying independence.

744. SANDS, Robert L. *Alcohol knowledge of secondary school students and the use of alcoholic beverages*. M.S. in Physical Education, 1976, 48 p. (D. Mapes)

The Benson Test of Alcohol Knowledge was administered to 364 *Ss* to determine if there was a difference between knowledge about alcoholic beverages and quantity of alcohol consumed in a mo by secondary school students classified as abstainers, frequent drinkers and dependent drinkers. A 3 X 2 X 2 X 3 factorial ANOVA was employed to determine if there were statistically significant differences between the $\bar{X}$ scores of the test of alcohol knowledge involving the 3 classifications of student drinkers; the sex of the students; the students who participated in extra-curricular activities and students who did not participate in these types of activities; and the drinking habits of the parents as indicated by the students. When secondary school students were classified in the above categories, their knowlege about alcohol had no relation to the quantity of alcohol consumed in a mo. When various categories of secondary students were combined, their knowledge about alcohol had no relation to the quantity of alcohol consumed in a mo.

745. SARTORE, Michael L. *A comparison of selected personality traits of female athletes at two educational levels*. M.S. in Physical Education, 1976, 29 p. (B. Yeager)

The personality traits of college female athletes who competed in track and field were compared to the personality traits of SHS female athletes who competed in track and field. The Cattell 16PF was administered to a total of 45 *Ss* included in Group I (*N*=17) Macomb High girls' varsity track and field team, Group II (*N*=16) Springfield Lanphier SHS girls' varsity track and field team and Group III (*N*=12) WIU girls' varsity track and field team. Answer sheets were hand scored and data transferred to data input cards for computer analysis. A discriminant analysis was used to analyze the data. Results showed that the Macomb High athletes were more group dependent (Q_2) than the WIU athletes and more uncontrolled (Q_3) than either the Springfield Lanphier or WIU athletes. The discriminant analysis found that the groups were highly distinguishable when reclassified using the variables entered into the study.

746. SHERWOOD, Steven R. Hitting drills used by varsity baseball teams in selected Illinois high schools. M.S. in Physical Education, 1976, 58 p. (W. Bradley)

Varsity baseball coaches (*N*=74) in randomly selected SHS in IL were surveyed to investigate the relationship between the use of selected hitting drills to team batting average (TBA) and to determine the contribution of each hitting drill to $\bar{X}$ TBA. Subpurposes involved determining the hitting drill that varsity baseball coaches used most frequently and the % of hitting practice that was devoted to each of the hitting drills. The following conclusions appear warranted. There was a slight *r* between the selected hitting drills, Down Swing and Hitting the Curveball, to TBA $\bar{X}$. Some of the selected hitting drills seemed to measure the same aspect of what was being measured by TBA $\bar{X}$. The selected hitting drill, Down Swing, contributed about 21% of what was being measured by TBA $\bar{X}$. All 11 selected hitting drills contributed less than 50% of what was being measured by TBA $\bar{X}$. Over 50% of TBA $\bar{X}$ must be attributed to something other than the contribution of the selected hitting drills. The selected hitting drill, Pepper, was most frequently used by varsity baseball coaches in IL, accounting for over 11% of hitting practice.

747. SOWERS, Ellen H. A comparison of personality characteristics of high school female athletes in two sports. M.S. in Physical Education, 1976, 36 p. (B. Yeager)

The personality characteristics of female SHS athletes in 2 sports from 2 different states were examined. The sports were basketball and gymnastics in IA and IL SHS. Athletes were chosen for the study by their respective coach on the basis of ability and length of experience. The Cattell 16PF was administered by each coach to their athletes. The total no. of *Ss* tested was 40, 10 athletes from each of the 4 teams. Data were analyzed using discriminant analysis. 2 significant factors were trait H (venturesome) and I (realism) ($p < .05$). At $p <$ .01, only factor I (realism) was found to be significant. Significance between group differences was determined through a *post hoc* comparison of both factors H and I. The IA basketball players were significantly more shy than either the IL basketball players or the IL gymnasts. Both IL groups were determined to be more venturesome than the IA basketball players. The *post hoc* comparison of factor I concluded that the IA basketball players were significantly more tough-minded and IA gymnasts were more tender-minded. There was no statistical significance found between the athletes in 14 of the traits tested.

748. WELLER, Richard D. *An analysis of Illinois volunteer 4-H leaders' evaluation of the county 4-H show in providing education and experiences to the 4-H member*. M.S. in Recreation and Park Administration, 1976, 61 p. (F. Lupton)

A questionnaire was used to gather data needed to analyze the volunteer 4-H leaders' evaluation of the county 4-H show in providing project oriented educational experiences to the 4-H member. *S*s were 205 volunteer 4-H leaders in 88 IL counties. Data were obtained concerning: attitude of ideal standards for 4-H shows; the degree of presence of the ideal; and open remarks from respondents concerning suggestions for improvements. Data ratings were made with the use of a Likert scale. Leaders felt that parental and family interest, co-operation and involvement are important for a satisfactory 4-H show experience by the exhibitor, but these factors were not present to a satisfactory degree to provide the ultimate in experiences and education. Ideals of leadership development and type of involvement at the show were considered important by the 4-H leader but these did not exist in general to the degree they felt satisfactory. The ideals of judging were the aspects most heavily criticized as not being present and yet the 1 area felt most important in providing education and experiences to exhibitors. Respondents were concerned about selection and competence of judges and that the exhibitor and judge had an opportunity to communicate as much as possible.

PERIODICALS REVIEWED

Acta Chirurgica Scandinavica
*Acta Medica Scandinavica
Acta Orthopaedica Scandinavica
*Acta Paediatrica Scandinavica
*Acta Physiologica Scandinavica
*American Corrective Therapy Journal
*American Family Physician
*American Heart Journal
*American Journal of Anatomy
*American Journal of Cardiology
*American Journal of Clinical Nutrition
*American Journal of Epidemiology
American Journal of Human Genetics
American Journal of the Medical Sciences
*American Journal of Medicine
*American Journal of Nursing
*American Journal of Orthopsychiatry
American Journal of Physical Anthropology
*American Journal of Physical Medicine
*American Journal of Physiology
American Journal of Psychiatry
*American Journal of Psychology
*American Journal of Public Health
American Journal of Tropical Medicine and Hygiene
*American Review of Respiratory Diseases
*American Sociological Review
*Anatomical Record
*Annals of Human Biology
Annals of Human Genetics
Annals of Internal Medicine
*Archives of Environmental Health
Archives of Internal Medicine
*Archives of Physical Medicine and Rehabilitation
Archives of Surgery
Australian Journal of Experimental Biology and Medical Science
*Aviation, Space, and Environmental Medicine
British Heart Journal
*British Journal of Industrial Medicine
*British Journal of Nutrition
*British Journal of Preventive and Social Medicine
*British Journal of Psychiatry
British Journal of Psychology
*British Medical Bulletin
*British Medical Journal
Canadian Journal of Physiology and Pharmacology
Canadian Journal of Psychology
Canadian Journal of Public Health
*Child Study Journal
*Circulation
*Clinical Science and Molecular Medicine
Community Mental Health Journal
*Danish Medical Bulletin
Diabetes
Educational and Psychological Measurements
*Ergonomics
*European Journal of Applied Physiology and Occupational Physiology
FDA Consumer (Papers)
*Federation Proceedings
*Genetic Psychology Monographs
*Geriatrics

*Periodicals marked with an asterisk have research reports listed in Part II--Bibliography of this issue of Completed Research.

*Government Reports Announcements and Index
*Growth
*Health Education
*Health Education Journal
*Home Economics Research Journal
*Human Biology
*Human Factors
*Indian Journal of Medical Research
*International Journal of the Addictions
*International Journal of Health Education
International Journal of Occupational Health and Safety
International Journal of Social Psychiatry
*International Review of Sport Sociology
*Japanese Journal of Physiology
John's Hopkins Medical Journal
*Journal of the American College Health Association
*Journal of the American Dental Association
*Journal of the American Dietetic Association
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Journal of Anatomy
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*Journal of Studies in Alcohol
Journal of Teacher Education
Journal of Tropical Medicine and Hygiene
*Lancet
*Medicine and Science in Sports

*Military Medicine
Monographs of the Society for Research in Child Development
*Nature
*New England Journal of Medicine
New York State Journal of Medicine
*Nursing Outlook
*Nursing Research
Nutrition Abstracts and Reviews
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*Proceedings of the Nutrition Society
Proceedings of the Society for Experimental Biology and Medicine
Psychoanalytic Review
*Psychological Bulletin
*Psychological Review
*Psychology in the Schools
Psychosomatic Medicine
*Public Health Reports
Quarterly Journal of Experimental Physiology and Cognate Medical Sciences
*Quarterly Journal of Experimental Psychology
Quarterly Review of Biology
Quest
Research Bulletin of the NEA
*Research Quarterly, AAHPER
Revue Canadienne de Biologie
Rheumatology and Rehabilitation
*Royal Society of Health Journal
*Scandinavian Journal of Clinical and Laboratory Investigation
School Review
*Science
Social and Rehabilitation Record
Society
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Sociology and Social Research
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South African Journal of Medical Science
*South African Medical Journal
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